

Incident Management Mission Diagnostic Method, Version 1.0

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Abstract

The Incident Management Mission Diagnostic (IMMD) is a risk-based approach for determining the potential for success of an organization's incident management capability (IMC). This potential for success is based on a finite set of current conditions – a limited set of key drivers used to estimate the current IMC health relative to a defined benchmark. Decision-makers can then determine if the current state of the IMC is acceptable, or if actions are required to improve the situation. The IMMD can be viewed as an efficient, first-pass screening of an IMC to diagnose any unusual circumstances that might affect its potential for success. This document can be read for understanding of the concepts and activities of this method, or to learn how to perform the IMMD. The method description includes full descriptions of all activities as well as a set of worksheets and instructions for executing the method.

Acknowledgements

The authors would like to acknowledge the contributions of Christopher Alberts and Lisa Marino with respect to their work on the foundational Mission Diagnostic Protocol [Alberts 2008].

1 Introduction

IMMD PURPOSE

The Incident Management Mission Diagnostic (IMMD) – Version 1.0¹ provides a quick evaluation of the potential for success of an organization's computer security or cyber-security incident management capability (IMC). It can be used as an independent technique, which is the focus of this report, or as an adjunct to a more complex evaluation (see Appendix B), such as the evaluation for the Incident Management Capability Metrics, Version 0.1 [Dorofee 2007].

INTENDED AUDIENCE

Our primary audience for this technical report is managers or senior staff members of IMCs who have a familiarity with risk management. People who have experience with or are interested in the following topics might also find this report useful:

- computer security incident management
- time- and resource-efficient methods for assessing risk

It is assumed that readers will have an extensive familiarity with computer security incident management if they intend to use this method, although readers with a general interest in risk management should also find this report interesting.

USING THIS DOCUMENT

This document can be read to understand the concepts and activities of this method, or to learn how to perform an IMMD. If you are reading to understand the concepts, the worksheets can be scanned as necessary. If you are intending to perform an IMMD, read the body of this document while looking at the worksheets to ensure you know what to do and how to perform each activity. Once you are comfortable with the materials, the worksheets and instructions in Appendix A can be detached and used during execution of the method. Note that this report is written from the perspective of an independent team performing the IMMD method.

¹ The IMMD is derived from the Mission Diagnostic Protocol, Version 1.0 [Alberts 2008].

CONTENT OF THIS TECHNICAL NOTE

This section is a brief introduction to the document. Section 2 provides a brief explanation of incident management. Section 3 provides a brief background on the concepts of risk and the Mission Diagnostic Protocol (MDP). The IMMD is introduced and defined in Sections 4 and 5. Sections 6 through 8 describe the method activities in detail. Appendix A provides a complete set of worksheets and instructions. Appendix B describes an alternative, adjunct use of this method by combining it with a much larger, more in-depth type of evaluation to add a “flavor of mission risk.” Appendix C describes all the activities and data types (inputs, constraints, resources, and outputs) for the IMMD. Appendix D provides a cross-reference between activities and data items in the IMMD and its parent protocol, the Mission Diagnostic Protocol.

2 Incident Management Background

WHAT IS INCIDENT MANAGEMENT?

In this document, the term *incident management* represents all of the functions performed in an organization to manage computer security incidents. This document does not provide extensive explanation for incident management; that can be found in the references in this report. However, in short, an incident management capability includes four basic categories of functions:

- Protect – fortification of systems and networks to decrease the potential for attacks against the organization’s infrastructure
- Detect – reactive and proactive collection and analysis of information relative to potential weaknesses and attacks to determine if the infrastructure is being or could be attacked
- Respond – acting upon information to prevent, contain, or repair the infrastructure and enable the organization to resume or maintain operations
- Sustain – manage and continue the overall effectiveness of the incident management capability

WHAT IS AN IMC?

An incident management capability (IMC) can take many forms. Usually, in government, education, and commercial organizations, parts of this function are performed across a number of business functions or departments that can include security or information technology (IT) operations, risk management, human resources, or legal investigative units. Some organizations have a core team, generally referred to as a computer security incident response team (CSIRT)², that focuses on specific parts of the incident management process, particularly the coordination of response activities. This CSIRT may be ad hoc, virtual, or a formally defined, dedicated group of personnel. Whatever its organizational model, the team works with other parts of the organization, contractors, or other outsourced service providers to perform successful incident management. The services provided by an IMC are provided to its customers, called the constituency³.

For the purposes of this document, the term *IMC* will be used to represent all of the groups of people who perform incident management activities for an organization.

² CSIRT is a generic term for organizational entities whose main purpose is to detect, analyze, prevent, and respond to computer security incidents and vulnerabilities. Such entities may use names and acronyms such as computer emergency response team (CERT), computer incident response team (CIRT), security incident response team (SIRT), and other such names. What are typically considered CSIRT functions may also be performed as one activity within a broader enterprise security or risk management function such as a resiliency team or crisis-management team.

³ The constituency is the group to which the CSIRT or incident management capability provides services. For example, the constituency for a CSIRT in a government organization would be the employees and possibly the clients of the agency.

3 Mission Diagnostic Background

IMMD LINEAGE

The IMMD is derived from the Mission Diagnostic Protocol, Version 1.0 [Alberts 2008], developed by the Software Engineering Institute's Mission Success in Complex Environments (MSCE) Project. This protocol defined, in general, the types of activities and data used in a mission diagnostic but not the specific techniques or other implementation details. This method, the IMMD, was specifically tailored and developed for use with incident management and is consistent with a basic application of⁴ the Mission Diagnostic Protocol. As such, it includes all of the information and worksheets necessary to perform the method. This section provides the basic background on risk and the Mission Diagnostic Protocol philosophy needed to understand this method. For additional detail on the concepts and principles underlying the Mission Diagnostic Protocol, see [Alberts 2008].

FOCUS ON OUTCOMES

To begin, consider that any organization's IMC can have a range of possible outcomes associated with its objectives (e.g., they could successfully manage all incidents or fail to manage many incidents, remain within budget or exceed the budget). Conditions and events determine which outcome will be realized. Success ultimately lies with people's abilities to manage conditions and potential events effectively. The IMMD, as with other work in the MSCE project, focuses on managing success by managing outcomes.

DEFINITION OF RISK

The essence of risk, no matter what the domain, can be succinctly captured by the following definition: *Risk is the possibility of suffering loss* [Dorofee 1996].

⁴ The MDP can be applied at several levels of expertise and rigor (refer to Appendix D and particularly [Alberts 2008] for details). The IMMD, while it is specific to the incident management domain, is not tailored to a specific organization or set of IMC objectives, nor does this document provide detailed guidance for such tailoring. More advanced applications of the IMMD (including rule-based analysis, weighting factors, and tailored drivers) may be provided at a later time.

MISSION RISK

For this document, the term *mission risk* represents the range of outcomes for a given set of IMC objectives, based on current conditions, potential events, context, and how IMC functions are executed.

POTENTIAL FOR SUCCESS

The IMC's *potential for success* is the likelihood that an IMC's outcome will be viewed as successful (and thus acceptable to stakeholders). This concept is generally illustrated in Figure 1. Notice that some outcomes are considered to be acceptable, while others are viewed as unacceptable. Each of these outcomes is more or less likely given current conditions⁵.

The dividing line between acceptable and unacceptable outcomes is the *success threshold*. This represents IMC management's tolerance for risk. This tolerance is normally influenced by choice (e.g., personal preference of a manager) as well as circumstance (e.g., stakeholder expectations). The likelihood that an acceptable, or successful, outcome will be achieved is defined as the potential for success. The potential for success is the most likely outcome for the IMC given the current conditions, events, and context.

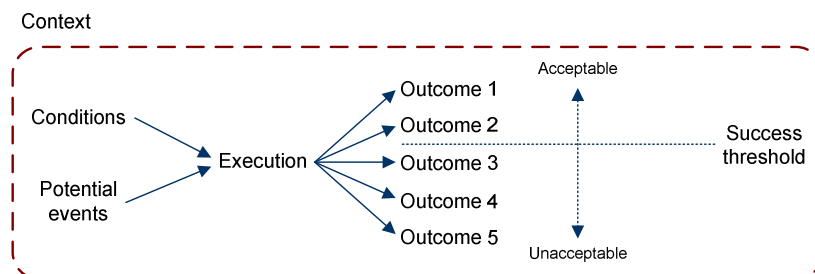


Figure 1: Successful and Unsuccessful Outcomes of an IMC

⁵ The probability associated with these outcomes is not equally dispersed across the different outcomes. In the IMMD, these probabilities are only estimated, as this version does provide the depth of detailed data gathering and analysis to support an accurate calculation of probability.

SUCCESS PROFILE

As shown in the following figure, the *success profile* depicts an IMC's current potential for success in relation to its desired, or target, potential for success. The *success differential* is a measure of a mission's current potential for success in relation to the success threshold. A difference may indicate a need for improvement or indicate that the current IMC is exceeding the threshold for success.

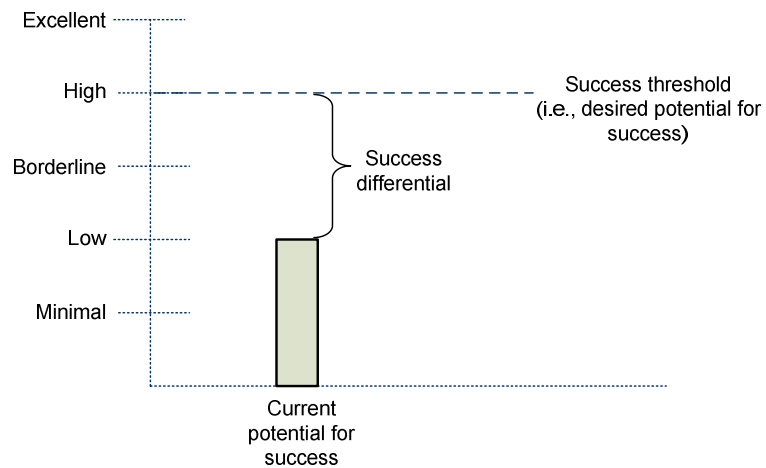


Figure 2: Success Profile

ASSESSING THE CURRENT POTENTIAL FOR SUCCESS

Managing for mission success generally requires you to assess the current potential for success in relation to the success threshold and take planned action, when appropriate, to increase the mission's potential for success. The IMMD provides a time-efficient means of doing this for an IMC by assessing drivers of IMC success.

WHAT IS A DRIVER?

The IMMD evaluates the potential for an IMC's success by considering a limited number of key drivers⁶. A driver is a qualitative measure that provides an indirect measure of success. It is not a guarantee of success, but rather an indication of the likelihood of success. The greater the number of drivers for success, the more likely the IMC will succeed. In this method, drivers provide an indirect measure of the potential for the IMC's success, which enables decision-makers to assess their progress toward the achievement of intended mission outcomes (i.e., the goals and objectives for the IMC).

⁶ The Mission Diagnostic Protocol, on which this method is based, had ten basic, general drivers derived from common failures or risks in projects. These were the starting place for developing the ten drivers used in the IMMD.

SUCCESS AND FAILURE DRIVERS

Each driver represents an *outcome driver* that can guide an IMC toward successful or failing outcome⁷. A *success driver* is a condition or circumstance (e.g., efficient work processes) that steers an IMC toward a successful outcome, while a *failure driver* is a condition or circumstance (e.g., inadequate budget) that steers an IMC toward an unsuccessful outcome. In IMMD, the set of drivers is evaluated to determine how many are success drivers, and how many are failure drivers. Each IMC will have a mixture of success and failure drivers influencing the eventual outcome. The goal is for the success drivers to provide a stronger influence on the outcome and steer the IMC toward success, while failure drivers (which can also be considered risks) are mitigated.

BASIC IMMD APPROACH

The philosophy underlying the IMMD is that the relative number of success and failure drivers can be used to forecast an IMC's potential for success. The analysis of drivers in IMMD has two parts:

1. Evaluate each driver to determine the extent to which it is a success or failure driver.
2. Analyze the entire set of drivers to estimate the overall potential for the success of the IMC.

⁷ An outcome here is defined as the end result of a specific mission. In the case of a CSIRT, a successful outcome could be that all computer security incidents are successfully managed in a timely manner, with little adverse impact to the organization. An unsuccessful outcome might be that security incidents are undetected and cause significant, costly damage to constituent systems and data.

4 IMMD Overview

INTRODUCTION

The Incident Management Mission Diagnostic (IMMD) is a risk-based approach for determining the potential for success of an organization's IMC. This potential for success is based on a finite set of current conditions – a limited set of key drivers used to estimate the current IMC potential for success relative to a defined benchmark of success (success threshold). The current potential for success is essentially the most likely outcome or degree of success for the IMC. Comparing it to the success threshold allows decision-makers to determine if the current state of the IMC is acceptable, or if actions are required to improve the situation.

OBJECTIVES

The main objectives of this method are to

- evaluate the drivers for the IMC in relation to current conditions
- determine the IMC's current potential for success in relation to a defined benchmark of success, the success threshold
- identify next steps for maintaining or improving an IMC's potential for success

BENEFIT

The IMMD can be viewed as an efficient, first-pass screening of an IMC to diagnose any unusual circumstances that might affect its potential for success. This method provides a time- and resource-efficient way to determine a high-level or “ballpark” estimate of an IMC's current potential for success and identify basic issues and concerns that can then be addressed or improved.

LIMITATIONS

The IMMD provides only a high-level estimate of the current potential for success of an IMC. As such, considerable uncertainty regarding the likely success of the IMC may still exist. Other techniques that directly analyze specific issues (e.g., scenario-based or statistical techniques) can be used to provide a more detailed estimate of an IMC's potential for success.

THE DRIVERS

The ten drivers used in the IMMD are as follows:

- realistic and well-articulated goals
- effective communication and information sharing
- well-understood customer needs and requirements
- organizational and political conditions that facilitate completion of IMC activities
- operational processes that support efficient and effective process execution of IMC activities
- IMC management that facilitates execution of tasks and activities
- efficient and effective task execution
- sufficient staffing and funding for all IMC activities
- adequate technological and physical infrastructure
- effectively managed changing circumstances and unpredictable events

IMMD STRUCTURE

The overall structure used within the IMMD specifies preparation and post-analysis activities as well as the core set of activities for conducting the IMMD. The following figure shows the three phases that must be completed when conducting an IMMD.



Figure 3: IMMD Structure

DATA FLOW

The following diagram highlights the data flow for the IMMD.

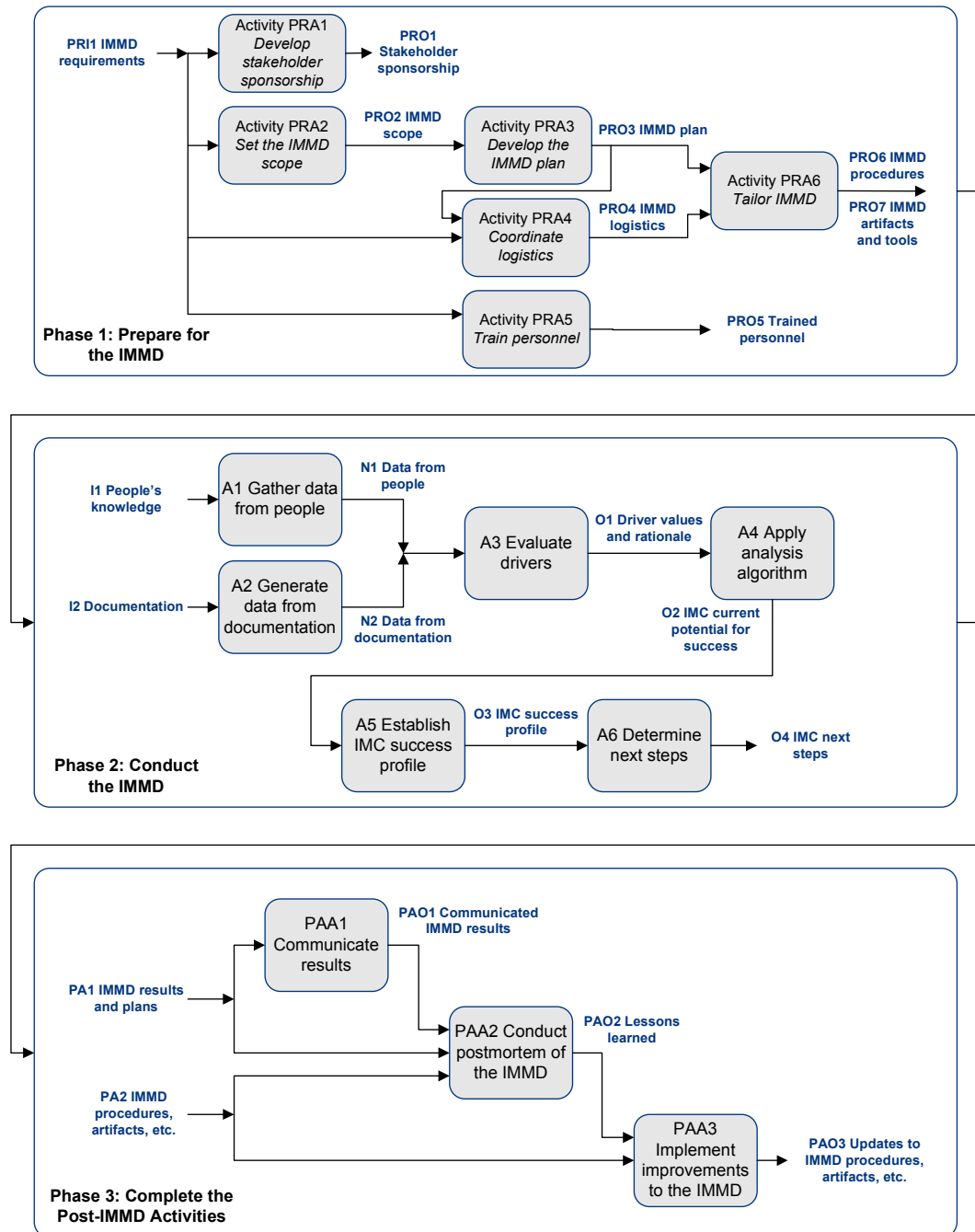


Figure 4: IMMD Data Flow

ACTIVITIES

The following table highlights and describes the key activities for all three phases of the IMMD along with the supporting worksheets involved in those activities. Note that all worksheets are included in Appendix A along with instructions.

Activity	Activity Description	Worksheets
Phase 1 – Prepare for the IMMD		
PRA1 Develop stakeholder sponsorship	Meet with key stakeholders and decision makers to foster their active and visible support of the IMMD.	IMMD Preparation Checklist
PRA2 Set the IMMD scope	Determine the boundaries of the IMMD based on requirements and constraints (schedule, funding, logistics, contractual restrictions).	IMMD Preparation Checklist IMMD Scope List
PRA3 Develop the IMMD plan	Create a plan for conducting the IMMD based on its scope as well as requirements and constraints (schedule, funding, etc.).	IMMD Preparation Checklist IMMD Scope List
PRA4 Coordinate logistics	Reserve rooms for meetings, make sure that any required equipment (e.g., overhead projectors, flip charts) is available, and inform people when meetings will be held.	IMMD Preparation Checklist IMMD Scope List
PRA5 Train personnel	Ensure that people who will perform the IMMD are able to effectively conduct all IMMD activities.	All
PRA6 Tailor IMMD procedures, criteria, and supporting artifacts	Adapt all IMMD procedures, criteria, and supporting artifacts (e.g., worksheets, templates, tools) for the circumstances and contexts in which those procedures will be used.	All
Phase 2 – Conduct the IMMD		
A1 Gather data from people	Elicit information about an IMC from people who play a role in executing IMC activities, and transform the information into usable data.	IMMD Questionnaire IMMD Handout
A2 Gather data from documentation	Collect and review documentation about the IMC, such as concept of operations, policies, procedures, or reports, and generate usable data from that documentation.	IMMD Document Checklist
A3 Evaluate drivers	Evaluate individual drivers against a set of defined criteria to determine the drivers' effects on the IMC's mission outcome.	IMMD Worksheet
A4 Apply analysis algorithm	Follow the selected analysis algorithm to estimate the current potential for success.	IMMD Worksheet

Activity	Activity Description	Worksheets
A5 Establish the IMC success profile	Generate a success profile for the IMMD by • setting the success threshold • comparing the IMC's current potential for success to the success threshold • deciding whether or not the current IMC potential for success is acceptable	IMMD Worksheet
A6 Determine next steps	Identify actions for maintaining or improving the IMC's current potential for success.	IMC Improvement Worksheet
Phase 3 – Complete the Post-IMMD Activities		
PAA1 Communicate results	Convey the results of the IMMD to key stakeholders.	IMMD Handout IMMD Worksheet IMC Improvement Worksheet
PAA2 Conduct postmortem of the IMMD	Conduct one or more meetings to • review the execution of the IMMD • identify strengths and weaknesses of the IMMD • document modifications and improvements to the IMMD process	IMC Improvement Worksheet
PAA3 Implement improvements to the IMMD process	Make changes, based on lessons learned, to the IMMD process, including updating procedures, worksheets, artifacts, tools, and training as appropriate.	IMC Improvement Worksheet

INPUTS, CONSTRAINTS, RESOURCES, AND OUTPUTS

Each IMMD phase and activity is depicted with a data flow diagram that shows its corresponding information inputs, constraints, resources, and outputs. As the same constraints and resources apply to all activities within a single phase, descriptions of constraints and resources presented in a single phase are not repeated in the descriptions for each individual phase activity.

A complete list of all IMMD activities, inputs, constraints, resources, and outputs is presented in Appendix C.

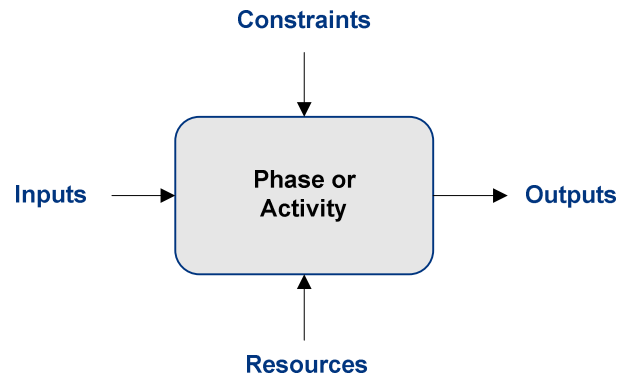


Figure 5: Data Flow Data Types

WORKSHEETS

The following table highlights the worksheets used in the IMMD. Note that all worksheets are included in Appendix A along with instructions.

Worksheet	Description
IMMD Preparation Checklist	A simple checklist of items that must be accomplished during the Phase 1 activities
IMMD Scope List	A simple list identifying the groups and specific individuals to be interviewed, as well as their key job responsibilities and the time and location of the interview
IMMD Questionnaire	A questionnaire reflective of the drivers used to direct the interview session with incident management personnel
IMMD Handout	A simple handout with the drivers as questions with additional explanation
IMMD Document Checklist	A checklist for what types of documents could be reviewed and what types of data should be acquired during the document review. Note that if the IMMD is being conducted in adjunct mode and documentation is being reviewed as part of a larger evaluation, then there should be checklists associated with the other evaluation method.
IMMD Worksheet	The primary worksheet for evaluating and scoring drivers, the rationale for the driver scores, and the final results of the IMMD
IMC Improvement Worksheet	A simple worksheet for considering and documenting improvements

5 General Guidance for Conducting IMMD

INTRODUCTION

This section provides general guidance for conducting an IMMD, as opposed to specific guidance for each activity, provided later in this document.

ANALYSIS TEAM AND REQUIRED SKILLS

The IMMD is conducted by an analysis team composed of three to five people who collectively have the following skills⁸:

- detailed knowledge of the incident management domain
- detailed knowledge of process improvement and management
- knowledge and skills appropriate to this method, such as
 - analytical skills
 - interviewing skills
 - facilitation skills
 - note-taking skills (i.e., ability to quickly record data that are identified by participants)

DEFINITION OF ROLES

The following roles are required. Any individual may fulfill more than one role.

Role	Description
Team lead	Guides all activities during the IMMD. The lead must be able to resolve conflicts within the team, manage the schedule, and work with the customers. One analysis team member is designated as the lead for the IMMD.
Interviewer	Leads the discussion with the participants. The interviewer asks the questions and prompts participants for answers as appropriate. The interviewer must also control the session to ensure equivalent participation by all, adherence to the schedule, and resolution of conflicts.
Note-taker	Ensures that all relevant data are recorded for later analysis and must be able to rapidly capture salient points for the associated activity
Logistics coordinator	Handles any logistics arrangements with the customer
Recorder (optional)	Captures a transcript of the discussion for later analysis and should be able to rapidly and accurately capture large amounts of data

⁸ This method description provides some relevant, simple guidance for facilitating interviews, but assumes that these basic types of skills already exist in the team.

DECISION MAKING GROUND RULES

Prior to the performing the IMMD, you need to establish ground rules for making decisions. For example, you could require unanimous agreement when making a decision. Alternatively, your decisions could be based on majority opinion, or you could use a team decision-making technique, such as multi-voting. Establishing decision-making ground rules ahead of time will facilitate execution of the techniques embodied in this method.

TAILORING MISSION DRIVERS

The ten drivers in this method can be tailored to accurately reflect the specific needs, concerns, or attributes of a given IMC or organization. Whenever you tailor drivers for a specific application, you need to make sure that the key drivers of success and failure are represented. You must make sure that the drivers you select minimally address the following:

- problems inherent in an IMC
- an inadequate workflow or process design
- inadequate execution of tasks and activities
- issues related to the operational environment
- unexpected or unpredictable events

For example, adherence to specific regulations or standards may be important enough to become a driver.

ADDITIONAL ANALYSIS

This is a basic evaluation for quickly assessing an IMC's potential for success. Because this technique uses drivers to estimate an IMC's likely outcome rather than a direct analysis, it provides a "ballpark" estimate of whether or not an IMC will likely be successful. For some IMCs with critical issues, a more detailed analysis technique could be used in addition to this technique. For example, a security audit or financial review may be used for a deeper investigation of security or budget issues.

**USING THE IMMD
INTERNALLY**

This document is written from the point of view of an independent analysis team conducting the method. However, it is also possible for an organization to use this method internally to evaluate its own IMC. Simply gather members of the IMC together and follow the directions. It is still important to remember to set the scope (and determine who will participate) and gather information from as many people as possible.

**USING THE IMMD
PERIODICALLY**

The IMMD, as written, is performed once. However, it can be used on a periodic basis to track the potential for success or expected level of success for an IMC. Some adjustment to the method can be made to streamline its application in a repetitive mode. For example, information could be gathered from people through distributed surveys or web-based techniques as opposed to interviews. Or the IMMD Questionnaire could be used periodically in a group setting, such as bimonthly project or CSIRT meetings.

6 Phase 1: Prepare for the IMMD

INTRODUCTION

Phase 1, *Prepare for the IMMD*, is focused on getting ready to conduct the IMMD evaluation. This includes all of the planning and logistics management needed to make the IMMD execution flow smoothly, assuring that key stakeholders provide visible support for the IMMD, and preparing the analysis team to conduct the IMMD during Phase 2.

The activities in Phase 1 should be completed prior to conducting the IMMD or at least before the beginning of Phase 2 activity *A1 Gather data from people*.

OBJECTIVES

Phase 1 answers the following questions:

- Who is sponsoring the IMMD?
- How can stakeholder sponsorship be attained?
- What is the scope of the IMMD?
- What is the plan for conducting the IMMD?
- What facilities and equipment are needed to conduct each IMMD activity?
- How will the IMMD evaluation team gain the knowledge, skills, and abilities to perform the IMMD?
- What procedures, tools, and artifacts are needed to conduct each IMMD activity?

DATA FLOW

The following diagram highlights the data flow for this phase.

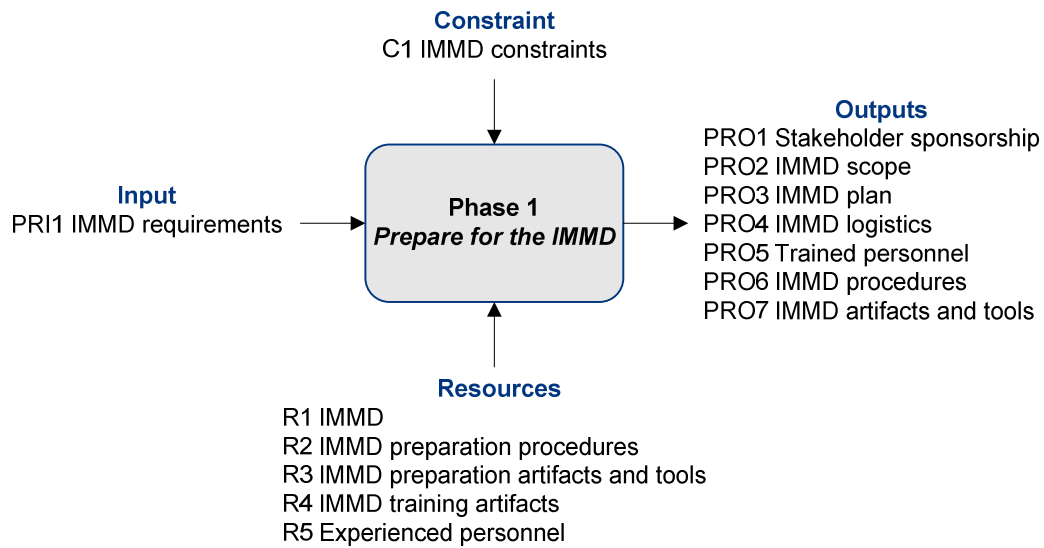


Figure 6: Data Flow for IMMD Phase 1

INPUT

The following input is required by the activities performed during this phase.

Type	Description
PRI1 IMMD requirements	The goals of the IMMD, needs of the stakeholders, and a basic description of the IMC being analyzed

CONSTRAINT⁹

The following constraint affects execution of the activities performed during this phase.

Type	Description
C1 IMMD constraints	Any circumstances that could affect the execution of the IMMD, including logistics, personnel, schedule, and cost issues

⁹ Constraints and resources affect the completion of all activities performed during Phase 1. The definitions for all Phase 1 constraints and resources are provided in this section only; they are not described again in the sections for individual Phase 1 activities.

RESOURCES

The following resources support execution of the activities performed during this phase.

Type	Description
R1 IMMD ¹⁰	The basic approach, or framework, for conducting an IMMD
R2 IMMD preparation procedures	Documentation that describes how to prepare for an IMMD
R3 IMMD preparation artifacts and tools	Worksheets, automated tools, and databases needed to prepare for an IMMD
R4 IMMD training artifacts	Documentation and other materials used to train people how to conduct an IMMD
R5 Experienced personnel	People who are experienced in all phases of an IMMD

OUTPUTS

The following outputs are produced by the activities performed during this phase.

Type	Description
PRO1 Stakeholder sponsorship	Active and visible support of the IMMD by key stakeholders and decision makers
PRO2 IMMD scope ¹¹	The boundaries of the IMMD, including - each key objective for the IMC's mission - activities needed to achieve the IMC's mission selected for the IMMD - selected people who have ultimate responsibility for completing or overseeing each selected activity Stakeholder input on IMC success criteria
PRO3 IMMD plan	The approach for conducting the IMMD, including key activities, resources, schedule, and funding, as well as the requirements for communicating results to key stakeholders after the IMMD is complete
PRO4 IMMD logistics	The facilities and equipment needed to conduct the IMMD as well as communications about meeting times and locations

¹⁰ Note that the IMMD Method presented in this report provides a framework, preparation procedures, and some worksheets that can be used for resources R1, R2, and R3. These resources are tailored in Phase 1 Activity PRA6 to produce customized IMMD procedures and artifacts (output resources PRO6 and PRO7) for the IMC that will be assessed.

¹¹ The scope defines which IMC activities to include in the IMMD and becomes a constraint in Phase 2. Some aspects of the IMC might be excluded from an IMMD due to contract limitations or on the basis of cost.

Type	Description
PRO5 Trained personnel	The people who are tasked with performing the IMMD and are prepared to conduct it
PRO6 IMMD procedures	Documentation that describes how to conduct IMMD activities
PRO7 IMMD artifacts and tools	Worksheets, automated tools, and databases needed to perform IMMD activities

KEY ACTIVITIES

The following table highlights the activities performed during this phase. The remainder of this section provides additional details about the activities featured in the data flow.

Activity	Description
PRA1 Develop stakeholder sponsorship	Meet with key stakeholders and decision makers to foster their active and visible support of the IMMD.
PRA2 Set the IMMD scope	Determine the boundaries of the IMMD based on requirements and constraints (schedule, funding, logistics, contractual restrictions).
PRA3 Develop the IMMD plan	Create a plan for conducting the IMMD based on its scope as well as requirements and constraints (schedule, funding, etc.).
PRA4 Coordinate logistics	Reserve rooms for meetings, make sure that any required equipment (e.g., overhead projectors, flip charts) is available, and inform people when meetings will be held.
PRA5 Train personnel	Ensure that people who will perform the IMMD are able to effectively conduct all IMMD activities.
PRA6 Tailor IMMD procedures, criteria, and supporting artifacts ¹²	Adapt all IMMD procedures, criteria, and supporting artifacts (e.g., worksheets, templates, tools) for the circumstances and contexts in which those procedures will be used.

¹² The set of key drivers is considered to be an IMMD artifact. Tailoring the set of drivers for a given application of the IMMD is completed during Phase 1 Activity PRA6.

DETAILED DATA FLOW

Depending on the initial IMMD requirements, constraints, and resources involved in a given evaluation, the sequence or order of the Phase 1 preparation activities is flexible. Activities in Phase 1 produce outputs that can become inputs, constraints, or resources for other preparation activities. For example, changes in schedules, logistics, or people's availability might require a revision in the scope and plan for conducting the assessment, as well as adjustments to the IMMD artifacts and tools to be used. Or an IMMD might start as a grass roots effort in which a tentative plan is developed prior to obtaining key stakeholder sponsorship.

The following figure provides merely one example of a detailed data flow for IMMD Phase 1. Note, however, that other data flows are also possible. With the exception of the common input *PRI1 IMMD requirements*, the other inputs shown in the example figure below are not reflected in the individual Phase 1 activity descriptions and data flows that follow.

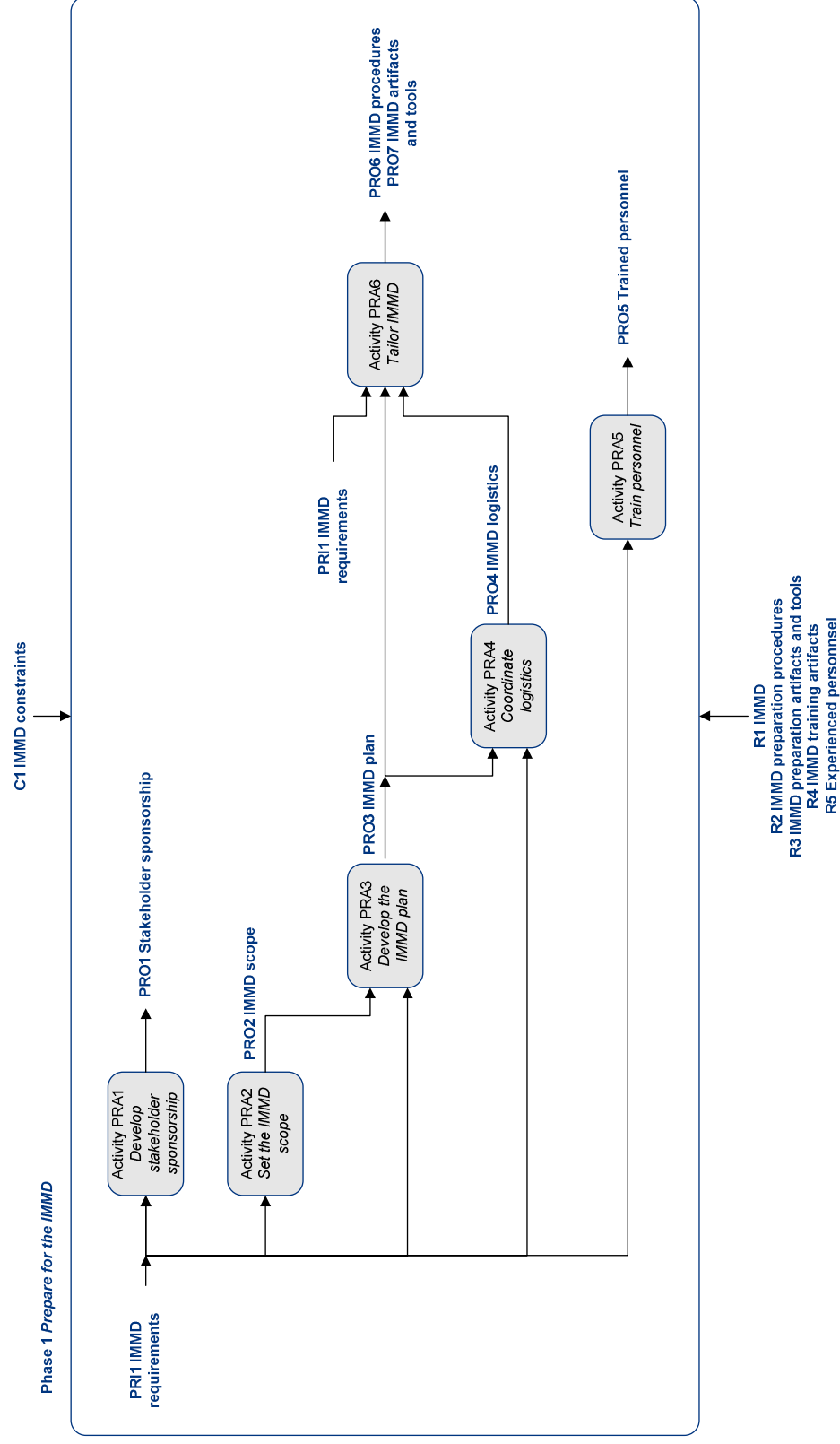


Figure 7: Detailed Data Flow for IMMD Phase 1

6.1 ACTIVITY PRA1: DEVELOP STAKEHOLDER SPONSORSHIP

INTRODUCTION

This activity identifies key stakeholders and decision makers to sponsor the IMMD, and fosters their active and visible support of the IMMD.

Without sponsorship, personnel may not be fully engaged in participating. Generally, stakeholders will be those funding or approving the IMMD. This task should be accomplished before the IMMD scope is determined.

OBJECTIVES

This activity answers the following questions:

- Who is sponsoring the IMMD?
- How can stakeholder sponsorship be attained?

DATA FLOW

The following diagram highlights the input and output for this activity.

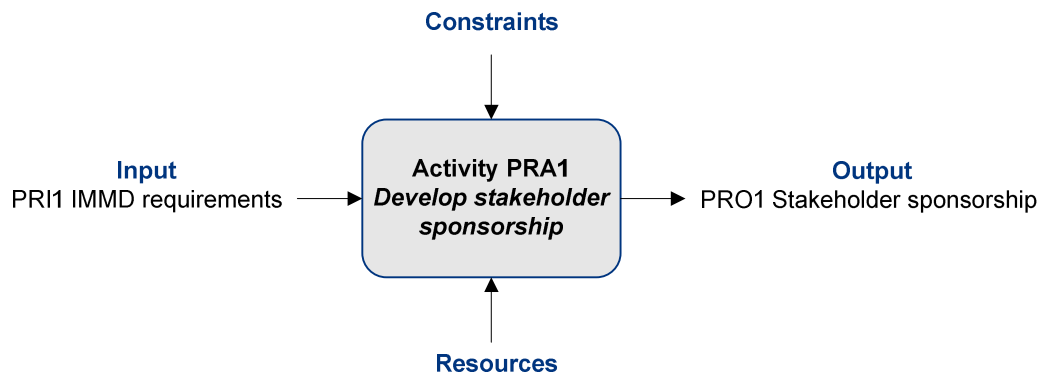


Figure 8: Data Flow for IMMD Phase 1 Activity PRA1

INPUT

The following input is required by this activity.

Type	Description
PRI1 IMMD requirements	The goals of the IMMD, needs of the stakeholders, and a basic description of the IMC being analyzed

OUTPUT

The following output is produced by this activity.

Type	Description
PRO1 Stakeholder sponsorship	Active and visible support of the IMMD by key stakeholders and decision makers

TECHNIQUES

Obtaining stakeholder sponsorship may be accomplished through a series of meetings, teleconferences, or other information exchanges with customer representatives, stakeholders, and other managers.

This activity can be performed concurrently with activity PRA2 *Set the IMMD scope* if the appropriate stakeholders and decision makers are available.

IMMD REQUIREMENTS

Some of the IMMD requirements, including the needs of the stakeholders, will be determined during this initial activity. These IMMD requirements may be further refined when the IMMD scope is determined.

WORKSHEET

The following worksheet (see Appendix A) can be used during this activity.

Type	Description
IMMD Preparation Checklist	A simple checklist of items that must be accomplished during the Phase 1 activities

PROCESS

The following table describes the process steps for this activity.

Step	Action	Worksheets
1	Prepare for conducting the activity. Leader reviews all of the procedures and worksheets for this activity and gathers information on the capacity and schedules of team members. The note-taker and any other team member participating in this activity should also be familiar with the procedures and worksheet.	IMMD Preparation Checklist

Step	Action	Worksheets
2	Meet with key stakeholders, managers, and decision makers. This meeting between the team lead (and note-taker) and the stakeholders should accomplish the following: • Provide an overview of the IMMD, discuss its purpose, objectives, benefits, and limitations for determining the potential for success of the organization's IMC. • Answer any questions. • Obtain active and visible support of the IMMD by the stakeholders and decision makers.	

TEAM ROLES, SKILLS, AND KNOWLEDGE

The following table summarizes the roles and skills for this activity.

The team lead, at a minimum, should be identified to start the planning and select the remaining team members. This must be finalized before conducting any interviews.

Role	Skills	Knowledge
Team lead	planning skills	• detailed knowledge of the IMC and incident management domains • detailed knowledge of and experience in the IMMD
Note-taker	note-taking skills	

LOGISTICS

The following must be addressed prior to conducting this activity:

- Appropriate stakeholders and managers who can make decisions about setting the range and scope of the IMMD must be identified and available for this activity.
- The IMMD team leader must understand all activities of the IMMD method and be prepared to explain and adequately answer any questions about it in order to obtain support of the stakeholders.

6.2 ACTIVITY PRA2: SET THE IMMD SCOPE

INTRODUCTION

This activity determines the boundaries of the IMMD based on requirements and constraints (schedule, funding, logistics, etc.).

The scope defines the extent, or range, of the IMC to be included in this IMMD. The scope is framed around the mission or goals of the IMC and the requirements of the IMMD. The scope sets the context for all data collection, analysis, and planning activities. For example, some groups or process functions may be eliminated from the analysis due to schedule or contractual constraints. This activity is also used to collect information (if possible) from stakeholders related to the IMC's success criteria. Stakeholders will usually have some opinion as to what constitutes success for this IMC. This information is used later to establish the IMC's success threshold¹³.

WHAT IS SCOPE?

The scope of the IMMD essentially defines how much of the IMC is to be included. For example:

- The IMMD could be limited to only the group of people officially designated as the incident response team or CSIRT
- Contractors or service providers may be excluded or included
- One of the incident management functions, such as Protect, could be excluded
- Specific groups in the organization that would be difficult or time-consuming to include, such as remotely located groups or groups within secure facilities that the analysis team cannot access, could be excluded

OBJECTIVES

This activity answers the following question:

- What is the scope of the IMMD?

The main objectives of this activity are to set the scope of the IMMD and to gather stakeholder input on the IMC's success threshold.

¹³ Note that the success threshold could be set here or later, but it must be set no later than in activity A5 *Establish the IMC success profile*.

DATA FLOW

The following diagram highlights the input and output for this activity.

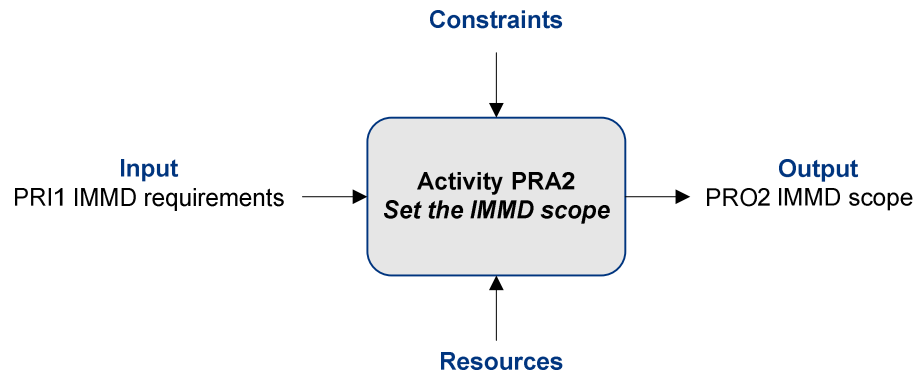


Figure 9: Data Flow for IMMD Phase 1 Activity PRA2

INPUT

The following input is required by this activity.

Type	Description
PRI1 IMMD requirements	The goals of the IMMD, needs of the stakeholders, and a basic description of the IMC being analyzed

OUTPUT

The following output is produced by this activity.

Type	Description
PRO2 IMMD scope	The boundaries of the IMMD, including • each key objective for the IMC's mission • activities needed to achieve the IMC's mission selected for the IMMD • selected people who have ultimate responsibility for completing or overseeing each selected activity Stakeholder input on IMC success criteria

TECHNIQUES

This activity may be accomplished through a series of meetings, teleconferences, or other information exchanges with customer representatives, stakeholders, and other managers. Use the IMMD Preparation Checklist in Appendix A as well.

This activity can be performed concurrently with activity *PRA1 Develop stakeholder sponsorship* if the appropriate stakeholders and decision makers are available.

IMMD REQUIREMENTS

Some of the IMMD requirements, including a description of the IMC being analyzed, will be determined during this activity. These IMMD requirements may be further refined when the IMMD plan is developed.

WORKSHEETS

The following worksheets (see Appendix A) can be used during this activity.

Type	Description
IMMD Preparation Checklist	A simple checklist of items that must be accomplished during the Phase 1 activities
IMMD Scope List	A simple list identifying the groups and specific individuals to be interviewed, as well as their key job responsibilities, and the time and location of the interviews

PROCESS

The following table describes the process steps for this activity.

Step	Action	Worksheets
1	Prepare for conducting the activity. Leader reviews all of the procedures and worksheets for this activity and gathers information on the capacity and schedules of team members. The note-taker and any other team member participating in this activity should also be familiar with the procedures and worksheet.	IMMD Preparation Checklist

Step	Action	Worksheets
2	Meet with key stakeholders, managers, and decision makers. This meeting between the team lead (and note-taker) and the stakeholders should accomplish the following: • Discuss the mission, objectives, and success criteria for the IMC. • Identify the appropriate IMC functions and groups to include in this evaluation. Include, as needed, contractors, service providers, and other external groups. • Discuss scheduling and resource constraints that could affect the interviews. • Discuss any action items and next steps.	IMMD scope list

TEAM ROLES, SKILLS, AND KNOWLEDGE

The following table summarizes the roles and skills for this activity. Note that the customer must provide stakeholders and senior incident management managers for this activity.

Role	Skills	Knowledge
Team lead	planning skills	• detailed knowledge of the IMC and incident management domains • detailed knowledge of and experience in the IMMD
Note-taker	note-taking skills	

LOGISTICS

The following must be addressed prior to conducting this activity:

- Appropriate stakeholders and managers who can make decisions about setting the range and scope of the IMMD must be identified and available for this activity.
- The IMMD leader must understand the work capacity and schedules for the IMMD team members.

SUCCESS CRITERIA

Not all stakeholders will be able to articulate what constitutes success for the IMC. Some stakeholders may be able to use the definitions for *potential for success* and *success threshold* (see activity A5 *Establish the IMC success profile*) and state their goals for the IMC. Others may only be able to state some specific goals, such as timely and effective management of incidents or high customer satisfaction. Still others may not have any input at all, other than having a secure infrastructure. The analysis team should gather whatever information they can from stakeholders about success at this point for use later on. Possible success criteria are the following:

- IMC does not exceed its budget.
- IMC meets required response times for incident management activities.
- Constituents are satisfied with the IMC.
- IMC should be a center of excellence.
- All intrusions should be detected within a reasonable amount of time.
- No significant damage to constituent systems or data should occur from any incident.

6.3 ACTIVITY PRA3: DEVELOP THE IMMD PLAN

INTRODUCTION

This activity creates a plan for conducting the IMMD based on its scope as well as requirements and constraints (schedule, funding, logistics, etc.). This plan will provide the approach for conducting the IMMD in Phase 2.

The IMMD plan must be agreed to by all parties.

OBJECTIVES

This activity answers the following questions:

- What is the plan for conducting the IMMD?

DATA FLOW

The following diagram highlights the input and output for this activity.

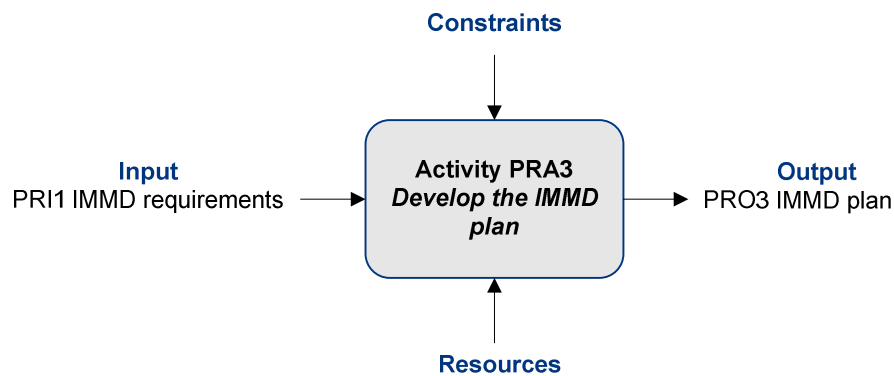


Figure 10: Data Flow for IMMD Phase 1 Activity PRA3

INPUT

The following input is required by this activity.

Type	Description
PRI1 IMMD requirements	The goals of the IMMD, needs of the stakeholders, and a basic description of the IMC being analyzed

OUTPUT

The following output is produced by this activity.

Type	Description
PRO3 IMMD plan	The approach for conducting the IMMD, including key activities, resources, schedule, and funding, as well as the requirements for communicating results to key stakeholders after the IMMD is complete

TECHNIQUES

The plan for conducting the IMMD should be developed jointly between the analysis team and the customer stakeholders. This can be accomplished through one or more teleconferences or meetings.

The IMMD analysis team also can take the lead in proposing an initial plan for conducting the IMMD and then present the plan to the stakeholders for refinement or agreement. The plan must include any requirements for communicating the results to key stakeholders after the IMMD is complete.

Use the IMMD Preparation Checklist in Appendix A as well.

IMMD REQUIREMENTS

The IMMD requirements, including the needs of the stakeholders, will determine the schedule and resources for conducting the IMMD. For example, stakeholder management may want the IMMD to be conducted within a week, minimizing the impact on personnel, with a quick briefing of results at the end of the week and a formal report within two weeks. These requirements may be refined when the IMMD scope is determined.

WORKSHEETS

The following worksheets (see Appendix A) can be used during this activity.

Type	Description
IMMD Preparation Checklist	A simple checklist of items that must be accomplished during the Phase 1 activities
IMMD Scope List	A simple list identifying the groups and specific individuals to be interviewed, as well as their key job responsibilities, and the time and location of the interviews

PROCESS

The following table describes the process steps for this activity.

Step	Action	Worksheets
1	Prepare for conducting the activity. Leader or team reviews the outputs <i>PRO1 Stakeholder sponsorship</i> and <i>PRO2 IMMD scope</i> as well as any notes or worksheets from activities PRA1 and PRA2. Other IMMD constraints and resources affecting the IMMD should also be considered.	IMMD Preparation Checklist IMMD Scope List
2	Jointly develop a plan for conducting the IMMD. Meetings, teleconferences, and email communications between the team lead and the customers should accomplish the following: • Identify key activities of the IMMD to be conducted in Phase 2. • Identify resources, including staff availability and schedules. • Assign roles and responsibilities for analysis team and IMC members. • Identify requirements for communicating IMMD results to key stakeholders.	
3	Obtain stakeholder agreement on plan. The plan is revised as necessary until consensus on the plan is reached.	

TEAM ROLES, SKILLS, AND KNOWLEDGE The following table summarizes the roles and skills for this activity.

Role	Skills	Knowledge
Team lead	planning skills	• detailed knowledge of the IMC and incident management domains • detailed knowledge of and experience in the IMMD
Note-taker	note-taking skills	

LOGISTICS

The following must be addressed prior to conducting this activity:

- Appropriate stakeholders and managers who can make decisions about setting the range and scope of the IMMD must be identified and available for this activity.
- The IMMD leader must understand the work capacity and schedules for the IMMD team members.

6.4 ACTIVITY PRA4: COORDINATE LOGISTICS

INTRODUCTION

This activity identifies and coordinates any logistic information and resources required to conduct the IMMD, primarily to prepare for activity *A1 Gather data from people*. This activity includes reserving rooms for meetings, makes sure that any required equipment (projectors, flip charts, etc.) is available, and informing participants when and where meetings and interviews will be held.

OBJECTIVES

This activity answers the following questions:

- What facilities and equipment are needed to conduct each IMMD activity?

DATA FLOW

The following diagram highlights the input and output for this activity.

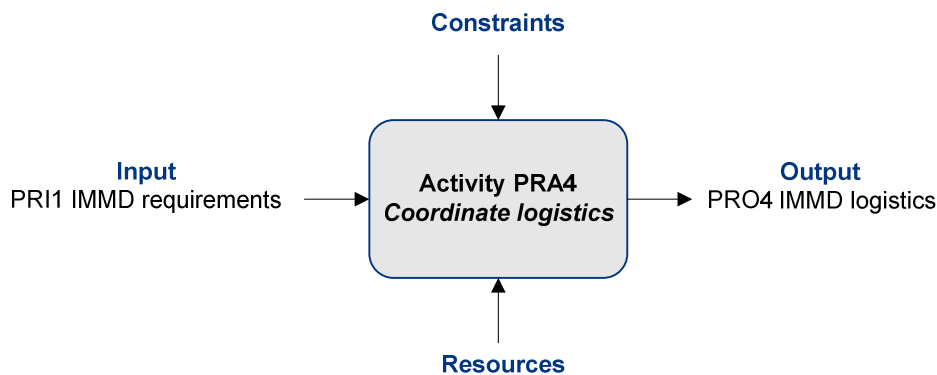


Figure 11: Data Flow for IMMD Phase 1 Activity PRA4

INPUT

The following input is required by this activity.

Type	Description
PRI1 IMMD requirements	The goals of the IMMD, needs of the stakeholders, and a basic description of the IMC being analyzed

OUTPUT

The following output is produced by this activity.

Type	Description
PRO4 IMMD logistics	The facilities and equipment needed to conduct the IMMD as well as communications about meeting times and locations

TECHNIQUES

This activity should be jointly performed by designated representatives from both the IMMD analysis team and the IMC. Phone calls and email can be used to communicate and coordinate all the logistic information needed for conducting the IMMD and preparing for activity *A1 Gather data from people*.

A logistics coordinator (and a backup) at the IMC must be identified to serve as the local point of contact for logistics coordination, to schedule meetings between the IMC staff and the IMMD analysis team, to obtain any needed equipment, and to perform other local coordination duties as needed.

WORKSHEETS

The following worksheets (see Appendix A) can be used during this activity.

Type	Description
IMMD Preparation Checklist	A simple checklist of items that must be accomplished during the Phase 1 activities
IMMD Scope List	A simple list identifying the groups and specific individuals to be interviewed, as well as their key job responsibilities, and the time and location of the interviews

PROCESS

The following table describes the process steps for this activity.

Step	Action	Worksheets
1	Prepare for conducting the activity. Logistics coordinators review the IMMD plan and any other information needed to schedule meetings or interviews between identified IMC staff and the IMMD analysis team.	IMMD Preparation Checklist IMMD Scope List

Step	Action	Worksheets
2	Establish regular communications between logistics coordinators. The IMMD logistics coordinator must communicate to the local IMC logistics coordinator any requirements or actions needed to prepare all participants for activity A1. The logistics coordinators will communicate regularly with each other to share information and complete any logistics actions identified in the IMMD plan in preparation for activity A1.	IMMD Preparation Checklist IMMD Scope List
3	Notify participants when and where meetings will be held. The IMC logistics coordinator will communicate logistics, schedules, and meeting locations to participants and IMMD analysis team.	IMMD Preparation Checklist IMMD Scope List

TEAM ROLES, SKILLS, AND KNOWLEDGE The following table summarizes the roles and skills for this activity.

Role	Skills	Knowledge
Logistics coordinator	communication skills planning skills	- knowledge of the IMC and incident management domains - knowledge of and experience in the IMMD

LOGISTICS

The designated logistics coordinators for the IMMD analysis team and the IMC must exchange contact information with each other, including email, phone numbers, and emergency or backup point of contact.

Logistics coordinators should each have a copy of the IMMD plan that identifies participants for activity A1.

6.5 ACTIVITY PRA5: TRAIN PERSONNEL

INTRODUCTION

This activity ensures that people who will perform the IMMD are prepared and able to effectively conduct all IMMD activities.

All people conducting the IMMD must be appropriately trained on the method or be able to perform their roles. The other Phase 1 activities can be conducted by just the team lead or another designated individual, but when the time comes for the activity *A1 Gather data from people*, the rest of the team should be able to perform the IMMD activities as well.

OBJECTIVES

This activity answers the following questions:

- How will the IMMD evaluation team gain the knowledge, skills, and abilities to perform the IMMD?

DATA FLOW

The following diagram highlights the inputs and outputs for this activity.

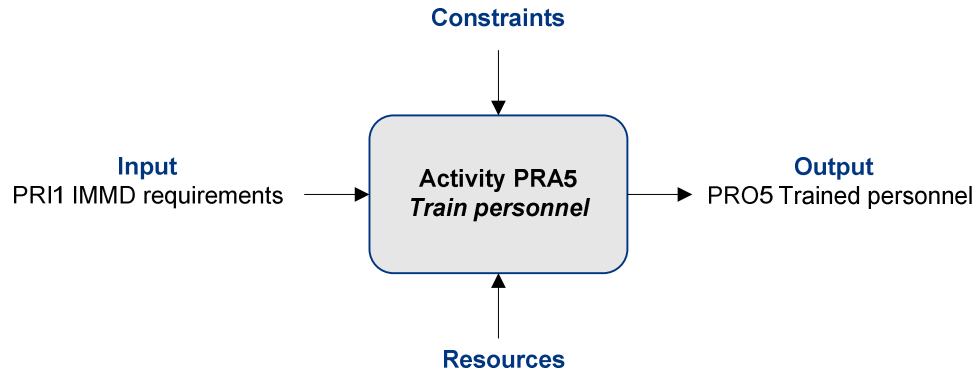


Figure 12: Data Flow for IMMD Phase 1 Activity PRA5

INPUT

The following input is required by this activity.

Type	Description
PRI1 IMMD requirements	The goals of the IMMD, needs of the stakeholders, and a basic description of the IMC being analyzed

OUTPUT

The following output is produced by this activity.

Type	Description
PRO5 Trained personnel	The people who are tasked with performing the IMMD and are prepared to conduct it

TECHNIQUES

Formal training on the IMMD method did not exist at the time this report was written.

Training may be as simple as having the team read this report and run table-top exercises to familiarize themselves with the worksheets.

The Mission Diagnostic Protocol, Version 1.0 [Alberts 2008] and other documents mentioned in the Bibliography provide additional information that may be useful in conducting an IMMD.

WORKSHEETS

All of the worksheets (see Appendix A) to be used for the IMMD should be reviewed during this activity.

Type	Description
IMMD Preparation Checklist	A simple checklist of items that must be accomplished during the Phase 1 activities
IMMD Scope List	A simple list identifying the groups and specific individuals to be interviewed, as well as their key job responsibilities, and the time and location of the interviews
IMMD Questionnaire	A questionnaire reflective of the drivers used to direct the interview session with incident management personnel
IMMD Handout	A simple handout with the drivers as questions with additional explanation
IMMD Document Checklist	A checklist for what types of documents could be reviewed and what types of data should be acquired during the document review. Note that if the IMMD is being conducted in adjunct mode and documentation is being reviewed as part of a larger evaluation, then there should be checklists associated with the other evaluation method.
IMMD Worksheet	The primary worksheet for evaluating and scoring drivers, the rationale for the driver scores, and the final results of the IMMD
IMC Improvement Worksheet	A simple worksheet for considering and documenting improvements

PROCESS

The following table describes the process steps for this activity.

Step	Action	Worksheets
1	Prepare for conducting the activity. Identify individuals who have the knowledge and skills listed in <i>Analysis Team and Required Skills</i> and <i>Definition of Roles</i> in section 5 of this report. Anyone who has previously conducted an IMMD may be asked to serve as a mentor to train others in this method.	
2	Identify training needs and available resources. Individuals that need to improve knowledge and skills identified should review this report and other resources listed in the Bibliography. The team lead can provide guidance to team members on specific IMMD activities, procedures, and supporting artifacts. Conducting table-top exercises or mock interviews can help to familiarize team members with the worksheets and processes.	All
3	Participate in an IMMD. Taking a role on an IMMD analysis team, even as an observer, will provide invaluable insight and experience to a team member regarding the activities that must be performed.	All

TEAM ROLES, SKILLS, AND KNOWLEDGE

The following table summarizes the roles and skills for this activity.

Role	Skills	Knowledge
Team lead	planning skills	- detailed knowledge of the IMC and incident management domains - detailed knowledge of and experience in the IMMD
Note-taker	note-taking skills	

LOGISTICS

The following must be addressed prior to conducting this activity:

- Potential team members for conducting an IMMD must be identified and available for this activity.
- The IMMD leader must understand the work capacity and schedules for the IMMD team members.

6.6 ACTIVITY PRA6: TAILOR IMMD PROCEDURES, CRITERIA, AND SUPPORTING ARTIFACTS

INTRODUCTION

This activity adapts all IMMD procedures, criteria, and supporting artifacts (e.g., worksheets, templates, tools) for the circumstances and contexts in which those procedures will be used.

OBJECTIVES

This activity answers the following questions:

- What procedures, tools, and artifacts are needed to conduct each IMMD activity?

DATA FLOW

The following diagram highlights the inputs and outputs for this activity.

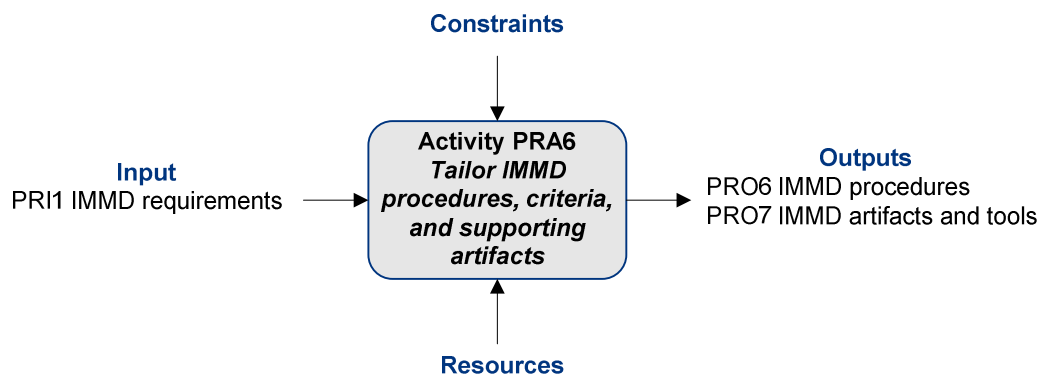


Figure 13: Data Flow for IMMD Phase 1 Activity PRA6

INPUT

The following input is required by this activity.

Type	Description
PRI1 IMMD requirements	The goals of the IMMD, needs of the stakeholders, and a basic description of the IMC being analyzed

OUTPUT

The following outputs are produced by this activity.

Type	Description
PRO6 IMMD procedures	Documentation that describes how to conduct IMMD activities
PRO7 IMMD artifacts and tools	Worksheets, automated tools, and databases needed to perform IMMD activities

TECHNIQUES

All of the procedures, tools, and artifacts used to conduct each IMMD activity should be reviewed and updated as appropriate to meet the needs of the IMMD activities being conducted and the IMC that is to be assessed. This can be performed during team preparation meetings, or the activity can be shared and assigned to individual members of the analysis team.

WORKSHEETS

All of the worksheets (see Appendix A) to be used for the IMMD should be reviewed and tailored or updated for the planned IMMD during this activity.

Type	Description
IMMD Preparation Checklist	A simple checklist of items that must be accomplished during the Phase 1 activities
IMMD Scope List	A simple list identifying the groups and specific individuals to be interviewed, as well as their key job responsibilities, and the time and location of the interviews
IMMD Questionnaire	A questionnaire reflective of the drivers used to direct the interview session with incident management personnel
IMMD Handout	A simple handout with the drivers as questions with additional explanation
IMMD Document Checklist	A checklist for what types of documents could be reviewed and what types of data should be acquired during the document review. Note that if the IMMD is being conducted in adjunct mode and documentation is being reviewed as part of a larger evaluation, then there should be checklists associated with the other evaluation method.
IMMD Worksheet	The primary worksheet for evaluating and scoring drivers, the rationale for the driver scores, and the final results of the IMMD
IMC Improvement Worksheet	A simple worksheet for considering and documenting improvements

IMMD TAILORING CONSIDERATIONS

The table below highlights some areas in which the IMMD can be tailored.

Item	Description
Techniques	The specific practices used to perform IMMD activities Selected techniques must satisfactorily achieve the key outcomes of the IMMD.
Procedures	The steps followed when performing an IMMD Procedures for implementing a given technique must be consistent with the objectives and requirements of that technique. They must also address any constraints and unique circumstances encountered (e.g., modifying an interview technique for use during a teleconference rather than a fact-to-face interview).
Driver set	The characteristics of an IMC essential for achieving its objectives The cumulative effects of all drivers are analyzed to determine whether an IMC has sufficient momentum toward its objectives. The driver set used to assess an IMC must be tailored to accurately reflect the key success characteristics of that IMC.
Assessment criteria	A set of measures used in various aspects of the IMMD An IMMD requires the following criteria: • driver value criteria in Activity A3 to evaluate each individual driver • success criteria in Activity A4 to determine the potential for success All criteria used during an IMMD must reflect the requirements and needs of key decision makers and stakeholders.
Supporting artifacts	Worksheets, templates, and tools used to support the execution of a given technique All supporting artifacts must • be consistent with the given techniques being used • support the key outcomes of the IMMD • support the overall goals of the IMMD

PROCESS

The following table describes the process steps for this activity.

Step	Action	Worksheets
1	Review all existing IMMD procedures, criteria, and supporting artifacts (worksheets, templates, tools). Leader or analysis team members review all of the procedures and artifacts for the IMMD to identify any adaptations or changes needed to conduct the IMMD of the organization's IMC, based on the stakeholder sponsorship, IMMD scope, IMMD plan, and IMMD logistics.	All

Step	Action	Worksheets
2	Make updates. Any procedures, criteria, or supporting artifacts that are missing or in need of revision should be updated prior to conducting the IMMD.	
3	Prepare artifacts. Worksheets or other materials used for conducting the IMMD should be prepared (printed) and organized as appropriate before the activity <i>A1 Gather data from people</i> .	

TEAM ROLES, SKILLS, AND KNOWLEDGE The following table summarizes the roles and skills for this activity.

Role	Skills	Knowledge
All	planning skills	- detailed knowledge of the IMC and incident management domains - detailed knowledge of and experience in the IMMD

LOGISTICS

The following must be addressed prior to conducting this activity:

- Copies of existing IMMD procedures, criteria, and supporting artifacts must be available to the team or individuals performing this activity.
- The IMMD leader and other team members involved in this activity must understand the IMMD method and resources required.

7 Phase 2: Conduct the IMMD

INTRODUCTION

During Phase 2, *Conduct the IMMD*, the core assessment activities are performed. During this phase, data are gathered from people and generated from relevant documentation. These data are then used to evaluate a set of key drivers that ultimately determine the current potential for success. Decision-makers then determine whether the current state is acceptable and identify actions for maintaining or improving the current potential for success.

OBJECTIVES

Phase 2 answers the following questions:

- What is the IMC's current potential for success?
- Is the IMC current potential for success acceptable?
- How can the IMC potential for success be maintained or improved over time?

DATA FLOW

The following diagram highlights the data flow for this phase.

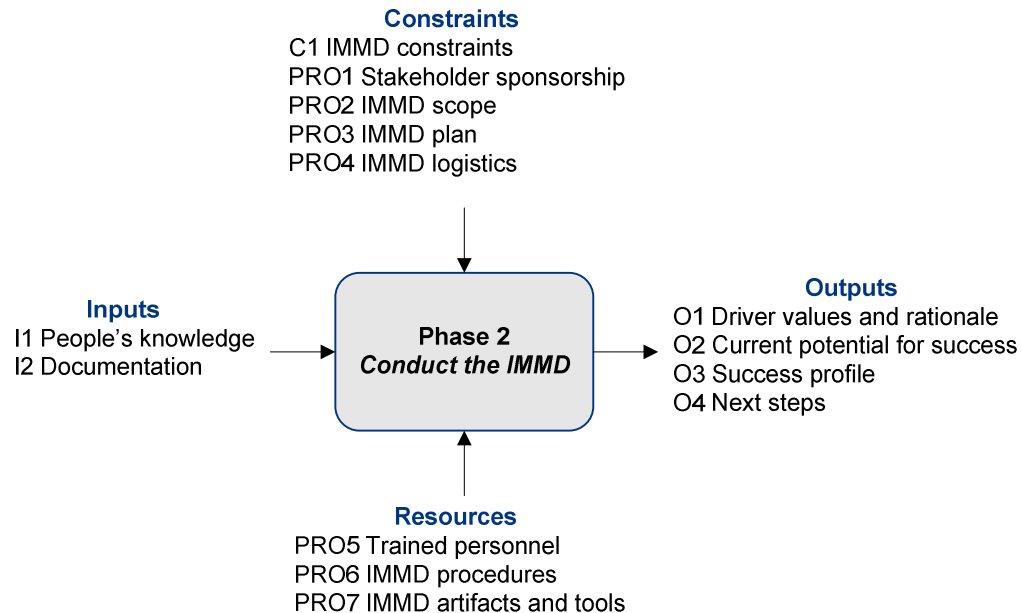


Figure 14: Data Flow for IMMD Phase 2

INPUTS

The following inputs are required by the activities performed during this phase.

Type	Description
I1 People's knowledge	People's individual and collective perspectives, information, and opinions about incident management (e.g., their activities and work products) and the IMC's potential for success
I2 Documentation	Documentation that is relevant to the IMC. Examples include IMC mission statement, concept of operations, policies, procedures, process workflow, work products, and quality assurance data.

CONSTRAINTS¹⁴

The following constraints affect execution of the activities performed during this phase.

Type	Description
C1 IMMD constraints	Any circumstances that could affect the execution of the IMMD, including logistics, personnel, schedule, and cost issues
PRO1 Stakeholder sponsorship	Active and visible support of the IMMD by key stakeholders and decision makers
PRO2 IMMD scope	The boundaries of the IMMD, including • each key objective for the IMC's mission • all activities needed to achieve the IMC's mission selected for the IMMD • the people who have ultimate responsibility for completing or overseeing each IMC activity Stakeholder input on IMC success criteria
PRO3 IMMD plan	The approach for conducting the IMMD, including key activities, resources, schedule, and funding, as well as the requirements for communicating results to key stakeholders after the IMMD is complete
PRO4 IMMD logistics	The facilities and equipment needed to conduct the IMMD as well as communications about meeting times and locations

¹⁴ Constraints affect all activities performed during Phase 2, while resources are used to aid the completion of all activities performed during Phase 2. The definitions for all Phase 2 constraints and resources are provided in this section only; they are not described again in the sections for individual Phase 2 activities.

RESOURCES

The following resources support execution of the activities performed during this phase.

Type	Description
PRO5 Trained personnel	The people who are tasked with performing the IMMD and are prepared to conduct it
PRO6 IMMD procedures	Documentation that describes how to conduct IMMD activities
PRO7 IMMD artifacts and tools	Worksheets, automated tools, and databases needed to perform IMMD activities

OUTPUTS

The following outputs are produced by the activities performed during this phase.

Type	Description
O1 Driver values and rationale	The current status of each driver, based on the data from people and documentation, which includes - the driver value - rationale that explains why that value was selected
O2 IMC current potential for success	A qualitative measure of the current probability, or likelihood, that the desired outcome will be achieved or exceeded
O3 IMC success profile	Status of the current IMC's chances for success, including - measure of the current IMC potential for success - identification of the IMC success threshold - analysis of the IMC success differential
O4 IMC next steps	Actions that need to be implemented by the customer organization to maintain or improve the IMC mission's current potential for success

KEY ACTIVITIES

The following table highlights the activities performed during this phase.

Activity	Description
A1 Gather data from people	Elicit information about an IMC from people who play a role in executing IMC activities, and transform the information into usable data.
A2 Gather data from documentation	Collect and review documentation about the IMC, such as concept of operations, policies, procedures, or reports, and generate usable data from that documentation.

Activity	Description
A3 Evaluate drivers	Evaluate individual drivers against a set of defined criteria to determine the drivers' effects on the IMC's mission outcome.
A4 Apply analysis algorithm	Follow the selected analysis algorithm to estimate the current potential for success.
A5 Establish the IMC success profile	Generate a success profile for the IMMD by • setting the success threshold • comparing the IMC's current potential for success to the success threshold • deciding whether or not the current IMC potential for success is acceptable
A6 Determine next steps	Identify actions for maintaining or improving the IMC's current potential for success.

DETAILED DATA FLOW The following figure provides a detailed data flow for IMMD Phase 2.

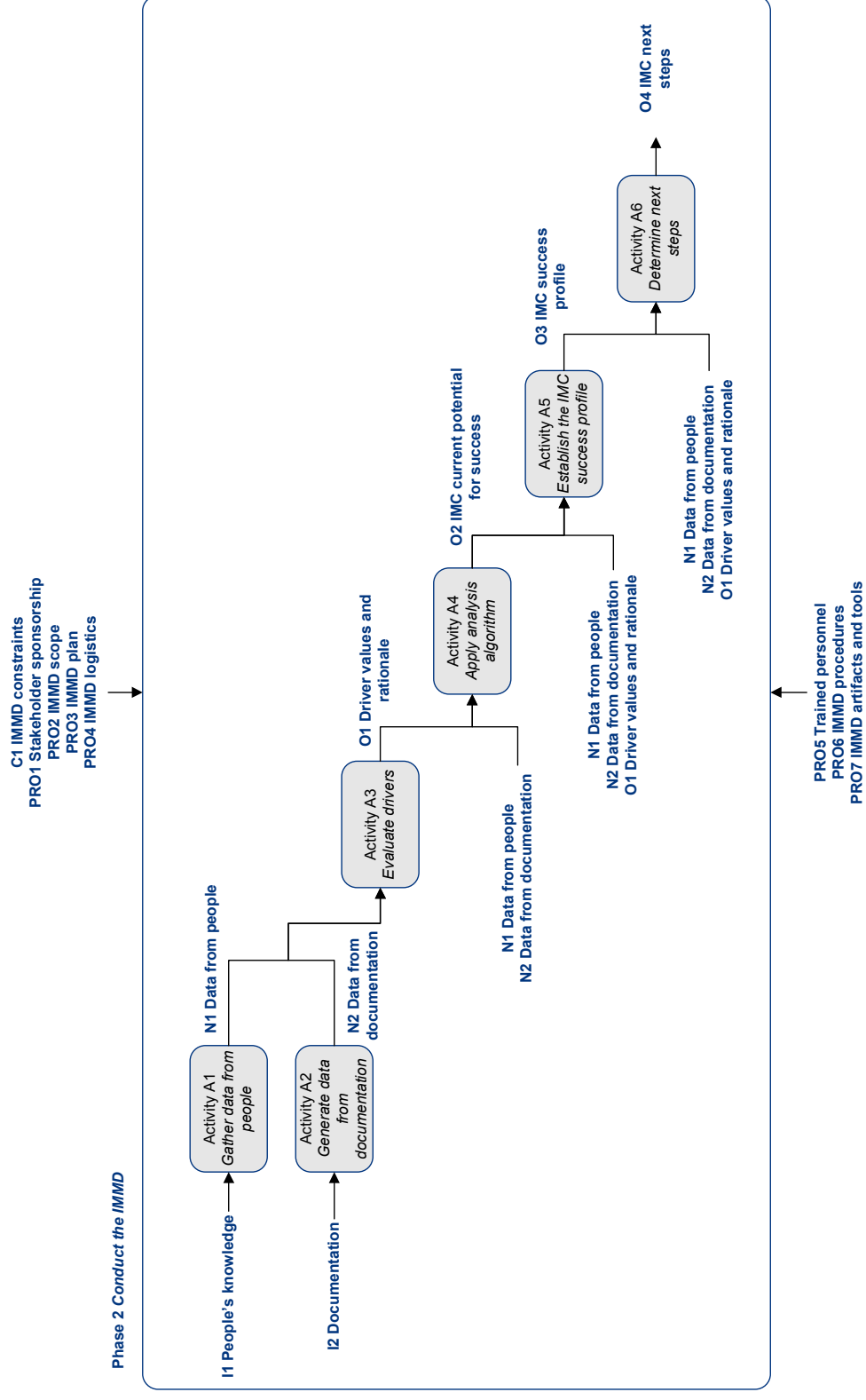


Figure 15: Detailed Data Flow for IMMD Phase 2

7.1 ACTIVITY A1: GATHER DATA FROM PEOPLE

INTRODUCTION

To analyze the IMC's health, information must be gathered. One key source of information is the people who execute incident management processes. This activity elicits information about an IMC from people who play a role in executing IMC activities, and transforms the information into usable data.

In this activity the IMMD analysis team interviews relevant groups of IMC personnel and gathers information about the IMC from their perspective:

- strengths that are guiding the IMC toward a successful outcome
- issues or weaknesses that are driving the IMC toward an unsuccessful outcome
- suggested improvements

OBJECTIVES

This activity answers the following questions:

- What conditions and events are driving the IMC toward a successful outcome?
- What conditions and events are driving the IMC toward an unsuccessful, or failed, outcome?

DATA FLOW

The following diagram highlights the input and output for this activity.

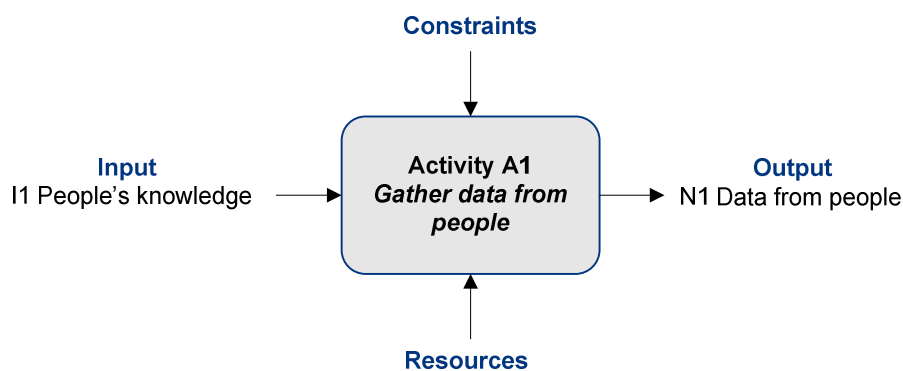


Figure 16: Data Flow for IMMD Phase 2 Activity A1

INPUT

The following input is required by this activity.

Type	Description
I1 People's knowledge	People's individual and collective perspectives, information, and opinions about incident management (e.g., their activities and work products) and the IMC's potential for success

OUTPUT

The following output is produced by this activity.

Type	Description
N1 Data from people	Usable data about an IMC based on individual and group perspectives, information, and opinions about the IMC and its potential for success • Strengths – conditions, circumstances, and events that drive an IMC toward a successful outcome • Issues – conditions, circumstances, and events that drive an IMC toward an unsuccessful outcome • Improvements – suggestions for improvements to drive an IMC toward a successful outcome

TECHNIQUES

- This is an interview-based process to gather incident management-related data from people involved in one or more incident management activities. The number of questions used in the interview will depend upon whether this activity is performed as part of a larger evaluation or in a stand-alone manner.

WORKSHEETS

The following worksheets (see Appendix A) are required by this activity.

Type	Description
IMMD Questionnaire	A questionnaire relative to the drivers used to direct the interview session with IMC personnel
IMMD Handout	A simple handout with the drivers as questions with additional explanation

PROCESS

The following table describes the process steps for this activity.

Step	Action	Worksheets
1	Prepare for conducting the activity. The analysis team reviews all of the procedures and worksheets for this activity prior to conducting it.	
2	Conduct interviews using the questionnaire. The interviewer asks participants questions according to the questionnaire. Use the IMMD Handout if needed to help participants understand the type of information you are seeking. Give the participants a chance to answer the question without verbally prompting them. After participants have expressed their initial thoughts, guide the follow-on discussion to ensure that that data you need to collect are discussed. If there are specific factors that you want participants to address, make sure you ask participants about those.	IMMD Questionnaire IMMD Handout
3	Record all data. The Note-taker, and optionally the Recorder, should record all issues, strengths, and improvements identified by the participants.	
4	Optional: Review all data. The team reviews the data generated by the interviews for clarity and understanding, revising any words when appropriate, and eliminating redundancies or unnecessary information. This optional activity can be used to reduce a large amount of information prior to its use in the activity <i>A3 Evaluate drivers</i> .	

TEAM ROLES, SKILLS AND KNOWLEDGE

The following table summarizes the roles and skills for this activity. Note that the customer must provide IMC personnel for this activity, as determined by the activity *PRA2 Set the IMMD scope*.

Role	Skills	Knowledge
Team lead	planning skills	- detailed knowledge of the IMC and incident management domains - detailed knowledge of and experience in process improvement and management - detailed knowledge of and experience in the IMMD
Interviewer	interviewing skills facilitation skills	
Note-taker	note-taking skills	
Recorder (optional)	raw data capture skills	

LOGISTICS

The following must be addressed prior to conducting this technique:

- Participants for each interview session have been identified.
- Each interview session has been scheduled.
- Participants have confirmed their availability for the session.
- Facilities, supplies, and equipment for the session (e.g., room, laptops, projector) are available and have been reserved.

IMPORTANT GROUND RULES FOR AN INTERVIEW SESSION

Peer groups. A person might not express his or her opinions if he or she perceives a reporting relationship with another individual in an interview session. All participants in a session should be organizational peers. At the beginning of a session, confirm that all participants in that session are peers.

Non-attribution. It is important to emphasize to participants that all discussions will be kept confidential and that nothing said in an interview will be attributed to an individual or group. People will be more willing to provide honest information when they are assured that nothing they say can or will be traced back to them. Interviews can result in data that can be extremely sensitive, and people might fear retribution from management.

Non-reaction. The members of the analysis team should not react either positively or negatively to the ideas and opinions expressed by the participants during an interview. Participants may stop talking openly if they perceive that analysis team members are making judgments.

GUIDELINES AND TIPS

Recording data. For an analysis technique to produce reasonable results, all data recorded when conducting this technique *must* accurately represent the participants' perspectives. The scribe and recorder should capture all data in the words of participants. If there is any concern about whether or not the participant's data has been accurately captured, ask them to repeat their answers.

Interview duration. An interview should not require more than an hour. A half hour may be sufficient when interviewing one person.

ALTERNATIVE TO INTERVIEWS

While it is also possible to gather information from people through distribution of the questionnaire via paper or electronic means, it is important to realize that additional vital information relative to people's answers is gathered during an interview. If the IMMD is being used on a repetitive basis, however, other techniques besides interviewing can become quite useful as people become accustomed to the questions and the nature of data being collected.

7.2 ACTIVITY A2: GENERATE DATA FROM DOCUMENTATION

INTRODUCTION

This activity collects and reviews documentation about the IMC, such as concept of operations, policies, procedures, reports, or work products, and generates usable data from that documentation.

This activity produces the following:

- strengths in processes and practices that are guiding the IMC toward a successful outcome
- issues or weaknesses in processes and practices that are driving the IMC toward an unsuccessful outcome

The nature of the usable data depends upon the scope of the IMMD and the drivers being evaluated. For example, if one of the drivers deals with efficient work flow, then the design of the work processes may be reviewed.

OBJECTIVES

This activity answers the following questions:

- What documentation is relevant to the IMC?
- What conditions and events are driving the IMC toward a successful outcome?
- What conditions and events are driving the IMC toward an unsuccessful, or failed, outcome?

DATA FLOW

The following diagram highlights the input and output for this activity.

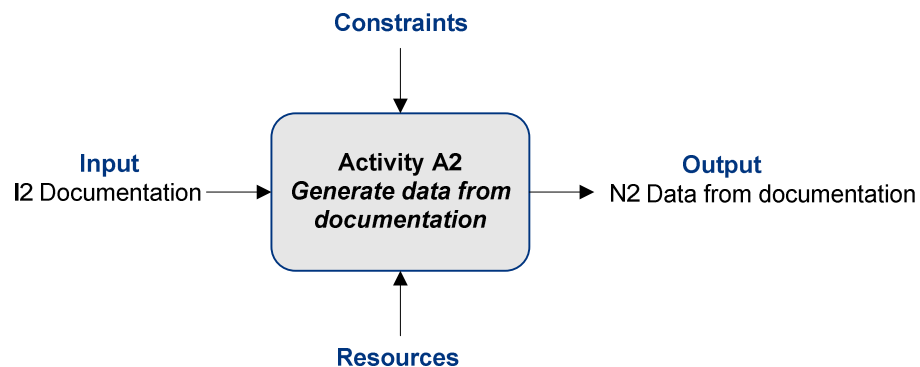


Figure 17: Data Flow for IMMD Phase 2 Activity A2

INPUT

The following input is required by this activity.

Type	Description
I2 Documentation	Documentation that is relevant to the IMC. Examples include IMC mission statement, concept of operations, policies, procedures, process workflow, work products, and quality assurance data.

OUTPUT

The following output is produced by this activity.

Type	Description
N2 Data from documentation	Usable data about the IMC that is distilled from documentation, such as a concept of operations, policies, procedures, work products, and quality assurance data • Strengths – conditions, circumstances, and events that drive an IMC toward a successful outcome • Issues – conditions, circumstances, and events that drive an IMC toward an unsuccessful outcome

TECHNIQUES

This activity requires the identification of documents to be reviewed, followed by the actual review and analysis of those documents to search for information that can support findings of success or failure drivers.

WORKSHEETS

The following worksheets (see Appendix A) are required by this activity.

Type	Description
IMMD Handout	A simple handout with the drivers as questions with additional explanation
IMMD Document Checklist	A checklist for what types of documents could be reviewed and what types of data should be acquired during the document review

PROCESS

The following table documents the process steps for this activity.

Step	Action	Worksheets
1	Prepare for conducting the activity. All team members review the procedures and worksheets for this activity. Decide if all team members review all documents or if the documents will be allocated to different team members.	
2	Review documentation. Each member of the team performing this activity should review documents assigned to them.	IMMD Document Checklist
3	Identify strengths. Answer the following question: What factors are driving the IMC toward a successful outcome? The IMMD Handout, which contains explanations for the drivers, can also be useful during this activity as a checklist for the types of issues that can be found.	IMMD Document Checklist IMMD Handout
4	Identify weaknesses. Answer the following question: What issues could prevent successful completion of the mission and objectives by this IMC? The IMMD Handout, which contains explanations for the drivers, can also be useful during this activity as a checklist for the types of issues that can be found.	IMMD Document Checklist IMMD Handout
5	Record all data. Record all issues and strengths that are identified, with supporting references as needed.	IMMD Document Checklist
6	Optional: Review all data. The team reviews the data generated by the document review for clarity and understanding, revising any words when appropriate, and eliminating redundancies or unnecessary information. This optional activity can be used to reduce a large amount of information prior to its use in the activity <i>A3 Evaluate drivers</i> .	

TEAM ROLES, SKILLS AND KNOWLEDGE

The following table summarizes the roles and skills for this activity. This activity is conducted by the team members who are assigned to review documents. One team member could review all documents, or the documents could be allocated to several team members. Whoever reviews documents should be able to take adequate notes.

Role	Skills	Knowledge
Team member(s)	document review skills (rapidly review for salient issues and strengths)	- detailed knowledge of the IMC and incident management domains - detailed knowledge of and experience in the IMMD

LOGISTICS

If artifacts and documents are reviewed at the customer site, team members will need a location to conduct the review. If documents are reviewed away from the customer site, adequate care should be taken to protect any sensitive information (both paper-based and electronic).

GUIDELINES AND TIPS

Excessive documentation: There could be a considerable amount of relevant documentation. The analysis team should carefully consider what documentation is critical to review without making this activity excessively time-consuming. Refer to the guidance at the end of this section.

Selecting critical documents: The interviews can provide some guidance on what documents to review. For example, if personnel are giving conflicting answers about their work processes, then a selected group of procedures related to those work processes should be reviewed. If constituents of the IMC have expressed discontent with the IMC work products, those should be reviewed.

Support other findings: Use the documentation to support or justify the findings of the analysis team from the interviews. This means the documentation review should be done after the interviews or partly in parallel. If it is done completely in parallel, you may perform unnecessary reviews or miss a critical document.

Spot-check: use a random selection of documents, such as policies and procedures, to look for patterns of weaknesses or strengths.

VARIATIONS FOR CONDUCTING THIS TECHNIQUE

When all team members review all of the documents, they can generate data after the document review by using the following approaches:

- Group members contribute potential data items spontaneously (unstructured brainstorming approach).
- Each group member takes a turn, in order, to state an item (round-robin approach).
- One team member collects data items from all team members, groups them by document, and the whole team reviews the consolidated set of notes and condenses them.

If documents were allocated, each reviewer can propose conclusions for the documents and the other team members can ask for clarification, discuss contradictions with their own findings, or request additional review.

7.3 ACTIVITY A3: EVALUATE DRIVERS

INTRODUCTION

This activity evaluates individual drivers against a set of defined criteria to determine the drivers' effects on the IMC's mission outcome.

In this activity drivers are identified as success drivers or failure drivers for the IMC. Each driver is individually assessed using the data gathered from people and documentation. First the data collected from people and documentation is reviewed to extract *data items* that collectively determine whether a driver is a success or failure driver. In other words, based on the data items, the evaluation team determines if the driver will (1) drive the IMC toward success, (2) drive it toward failure, (3) have no effect, or (4) have an unknown effect. Each driver is assessed against a set of evaluation criteria to determine its effect on the mission's outcome.

OBJECTIVES

This activity answers the following questions:

- How is each driver affecting the outcome?
- Which drivers are acting as success drivers? Why?
- Which drivers are acting as failure drivers? Why?

PROCESS FLOW

The following diagram highlights the inputs and output for this activity.

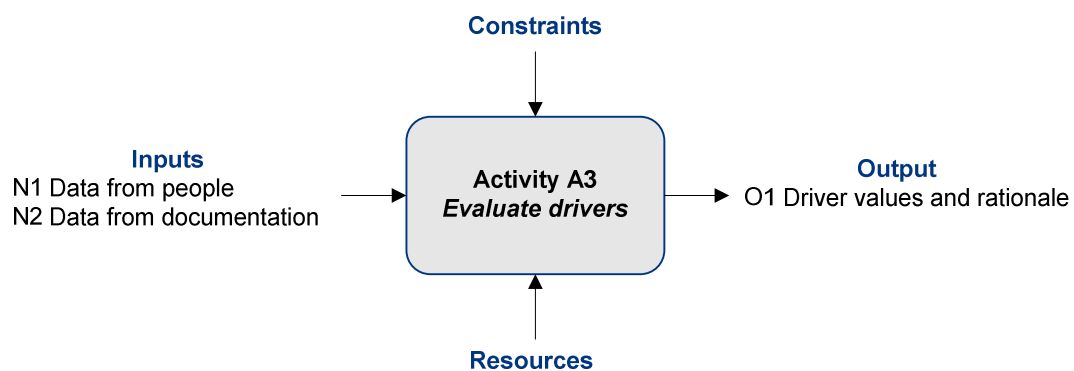


Figure 18: Data Flow for IMMD Phase 2 Activity A3

INPUTS

The following inputs are required by this activity.

Type	Description
N1 Data from people	Usable data about an IMC based on individual and group perspectives, information, and opinions about the IMC and its potential for success • Strengths – conditions, circumstances, and events that drive an IMC toward a successful outcome • Issues – conditions, circumstances, and events that drive an IMC toward an unsuccessful outcome • Improvements – suggestions for improvements to drive an IMC toward a successful outcome
N2 Data from documentation	Usable data about the IMC that is distilled from documentation, such as a concept of operations, policies, procedures, work products, and quality assurance data • Strengths – conditions, circumstances, and events that drive an IMC toward a successful outcome • Issues – conditions, circumstances, and events that drive an IMC toward an unsuccessful outcome

OUTPUT

The following output is produced by this activity.

Type	Description
O1 Driver values and rationale	The current status of each driver, based on the data from people and documentation, which includes • the driver value • rationale that explains why that value was selected

TECHNIQUES

This activity consists of two key parts:

- Assign all relevant data items from the activities *A1 Gather data from people* and *A2 Gather data from documentation* to the drivers (they become the rationale for the driver values).
- Evaluate the drivers against a set of evaluation criteria to arrive at a value for each driver (that value determines whether it is a success or failure driver).
- The techniques employed when conducting this activity depend on the knowledge, skills, and abilities of the people who are performing the IMMD. Evaluating drivers generally requires techniques for analyzing data that have been collected during earlier activities. In collaborative settings where a team is evaluating drivers, group decision-making techniques can also be effective.

WORKSHEET

The following worksheet (see Appendix A) is required by this activity.

Type	Description
IMMD Worksheet	The primary worksheet for evaluating and scoring drivers, the rationale for the driver scores, and the final results of the IMMD

PROCESS

The following table describes the process steps in this activity.

Step	Action	Worksheets
1	Prepare for conducting the activity. All team members review the procedure and worksheets for this activity prior to conducting it.	
2	Review all data for this IMC and the drivers. All team members review all of the data that they were responsible for capturing from the activities <i>A1 Gather data from people</i> and <i>A2 Gather data from documentation</i> and the drivers being used for this IMMD.	IMMD Worksheet
3	Assign data to drivers. The team extracts relevant data items (usually a statement, such as “Procedures are poorly documented” and assigns each data item to the most appropriate driver (the one influenced by the data item). Data items are essentially findings, positive, negative, or neutral. If any particular item does not neatly map into one of the mission drivers, it should be assigned to the category it best fits or assigned to multiple categories (see Guidelines and Tips).	IMMD Worksheet
4	Evaluate data items. Assign a value to each data item according to the data item criteria below.	IMMD Worksheet

Step	Action	Worksheets
5	Assess each driver. For each driver, the data items assigned to that driver are reviewed and the team determines their combined effect on the answer. A value for the driver is selected from the driver evaluation criteria below. The data items provide the rationale for the driver's value. Note that not all data items have an equivalent "weight" or significance. Some will be minor items that have little influence. Note that any data item valued as a "?" or unknown should be resolved if possible.	IMMD Worksheet
6	Record all data. The note-taker records all data on the worksheet.	IMMD Worksheet
7	Review all data. Review drivers and ensure there are no conflicts (e.g., "adequate budget and schedule" and "inadequate infrastructure"), misplaced data items, missing data items, or unnecessary data items. Beware of conflicts in driver answers. Discuss any issues and finalize the driver values. Note that there may be iterative reviews and revisions of these results.	

THE DRIVERS

As a reminder, the ten drivers evaluated in this activity are

- realistic and well-articulated goals
- effective communication and information sharing
- well-understood customer needs and requirements
- organizational and political conditions that facilitate completion of IMC activities
- operational processes that support efficient and effective process execution of IMC activities
- IMC management that facilitates execution of tasks and activities
- efficient and effective task execution
- sufficient staffing and funding for all IMC activities
- adequate technological and physical infrastructure
- effectively managed changing circumstances and unpredictable events

DATA ITEM CRITERIA

The following table provides a set of criteria that can be used to assess data items based on their effect on the success of the IMC's mission.

Data Item Value	Effect on IMC Mission
+	positive influence and is driving the IMC toward success (success driver)
-	negative effect on the IMC and is driving the IMC toward failure (failure driver)

Data Item Value	Effect on IMC Mission
0	no perceived influence and is not driving the IMC toward either success or failure (neutral driver)
?	could be significant to either success or failure but cannot currently be determined (unknown driver)

SAMPLE DATA ITEMS

The following table illustrates a few examples of data items for some of the drivers.

Driver	Sample Data Items
1. Are the IMC's goals realistic and well-articulated?	+ The IMC mission and goals are published to all constituents. - Current funding and staffing resources are strained to meet IMC objectives.
2. Are communication and information sharing about IMC activities effective?	+ IMC activities are shared with constituents via website and mailing lists. - Many customers still don't report incidents in accordance with guidelines.
3. Are customer requirements and needs well understood?	+ Customer comments and feedback are documented and forwarded to management for further action if appropriate. - No formal process exists to solicit or identify customer needs.
4. Are organizational and political conditions facilitating completion of IMC activities?	+ The organization recognizes and promotes good performance by staff. - Some upper managers request IMC staff to take on tasks that are not part of the IMC core mission, performing unnecessary tasks.
5. Does the operational process support efficient and effective execution?	+ Many IMC policies and procedures are well-documented and followed. - Current funding and staffing resources are strained.
6. Does IMC management facilitate execution of tasks and activities?	+ IMC manager is supportive, makes timely decisions, and communicates regularly with staff. - There is no formal quality assurance program or process for measuring effectiveness of IMC services.
7. Is task execution efficient and effective?	+ IMC staff consistently strive to meet or exceed expectations. - Some procedures are not efficient, requiring wasted effort on tasks.
8. Is staffing sufficient to execute all IMC activities?	+ IMC staff are knowledgeable, skilled, well-trained, and motivated. - IMC staffing is thin with many potential single points of failure.

Driver	Sample Data Items
9. Are the technological and physical infrastructures adequate to support all IMC activities?	+ Current infrastructure is adequate to meet IMC needs. - Long purchasing process delays the procurement of new equipment and upgrades.
10. Are changing circumstances and unpredictable events effectively managed?	+ IMC has business continuity plan to resume operations in alternate location. - IMC is ill-prepared to handle a spike or surge in workload.

DRIVER EVALUATION CRITERIA

The following table provides a set of criteria that can be used to evaluate drivers. Each driver will have one of these answers and the associated value, based on its data items. For example, if nearly all of the significant data items are a positive influence, then the answer to the driver question is likely Yes, with a value of 10 points. If the majority of data items have a negative influence, then the answer is likely No, with a value of 0 points. These criteria can be tailored to more accurately reflect the requirements of any particular analysis. For example, a sliding scale could be used instead of fixed values.

Answer	Value
Almost certainly yes	10
More likely yes than no	7.5
Equally likely yes or no	5
More likely no than yes	2.5
Almost certainly no	0

TEAM ROLES, SKILLS, AND KNOWLEDGE

The following table summarizes the roles and skills for this activity.

Role	Skills	Knowledge
Team lead	facilitation skills analytical skills	• detailed knowledge of the IMC and incident management domains • detailed knowledge of process improvement and management • detailed knowledge of and experience in the IMMD
Team members	analytical skills	
Note-taker	note-taking skills	

LOGISTICS

The analysis team will need a room with adequate table space to review and discuss all data. Consideration for maintaining confidentiality of the discussions and protecting customer data is also required.

GUIDELINES AND TIPS

Data does not fit any driver. Note that, in general, you would discard anything that cannot be classified according to the drivers. As a matter of practicality, these unused items can be reviewed later to determine if there is a serious gap in the drivers that may need to be corrected. Be cautious, however, as this can lead to an excessive and wasteful amount of fine-tuning on the drivers.

Data items that fit multiple drivers. Data items frequently influence more than one driver. For example, well-documented procedures can support effective task execution and effective control mechanisms. Place data items wherever they belong.

Conflicting drivers. You may find you have conflicting answers, such as an indication that budget and schedule are adequate but infrastructure is inadequate. These should be investigated and discussed to clarify the conflict, and if it is a true conflict in your findings, document it adequately in order to be able to explain it to the customer.

Tailored evaluation criteria for drivers. This technique is effective for quickly performing a “first-pass” evaluation of mission data in a time-efficient manner. As such, the evaluation criteria for this technique should be kept relatively simple. If you tailor the criteria, do not add too many additional values, such as 15 possible answers and relative points. Too many possible answers will lead to lengthy discussions and arguments, as this method is not sophisticated enough to make such precise distinctions. Reducing the number to three possible answers (e.g., Yes, Maybe, No) also would be insufficient, as it likely would produce nearly all answers of Maybe.

ALTERNATIVES

The ranges of answers for the driver questions can be altered as needed to provide a greater range (a lesser range is not recommended). In addition, specific thresholds can be set for critical drivers, such as a decision that the IMC must be capable of dealing with changes and unexpected events, and any answer other than Yes or More Likely Yes Than No is unacceptable.

7.4 ACTIVITY A4: APPLY ANALYSIS ALGORITHM

INTRODUCTION

This activity applies the selected analysis algorithm to the driver values to estimate the IMC's current potential for success.

The algorithm used in the IMMD method incorporates simple mathematics, summing the scores of all the drivers to obtain a total value representing the potential for success.

OBJECTIVES

This activity answers the following question:

- What is the current potential for success?

DATA FLOW

The following diagram highlights the inputs and output for this activity.

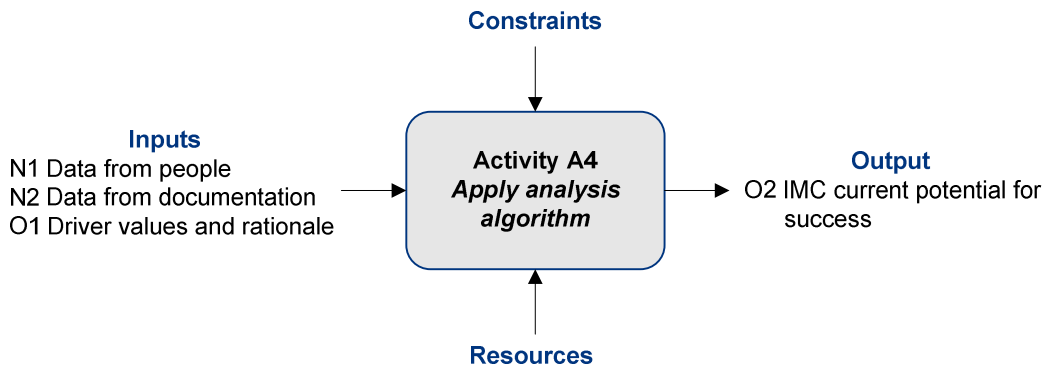


Figure 19: Data Flow for IMMD Phase 2 Activity A4

INPUTS

The following inputs are required by this activity.

Type	Description
N1 Data from people	Usable data about an IMC based on individual and group perspectives, information, and opinions about the IMC and its potential for success • Strengths – conditions, circumstances, and events that drive an IMC toward a successful outcome • Issues – conditions, circumstances, and events that drive an IMC toward an unsuccessful outcome • Improvements – suggestions for improvements to drive an IMC toward a successful outcome

Type	Description
N2 Data from documentation	Usable data about the IMC that is distilled from documentation, such as a concept of operations, policies, procedures, work products, and quality assurance data - Strengths – conditions, circumstances, and events that drive an IMC toward a successful outcome - Issues – conditions, circumstances, and events that drive an IMC toward an unsuccessful outcome
O1 Driver values and rationale	The current status of each driver, based on the data from people and documentation, which includes - the driver value - rationale that explains why that value was selected

OUTPUT

The following output is produced by this activity.

Type	Description
O2 IMC current potential for success	A qualitative measure of the current probability, or likelihood, that the desired outcome will be achieved or exceeded

TECHNIQUES

The IMMD uses a math-based algorithm employing an aggregate driver score that is simply the sum of the scores of all the individual drivers.

IMC POTENTIAL FOR SUCCESS CRITERIA AND FORMULA

The driver scores are summed to produce a total value. This simple formula uses a basic value of 10 points for each of 10 drivers, with a possible maximum aggregate value of 100.

$$\text{Total Points} = \text{SUM (I1:I10)} = \text{CPS}$$

CPS is the current potential for success, and I1:I10 are the values for drivers 1 through 10.

Once the total value is calculated, the table below provides criteria that can be used to assess an IMC's current potential for success. The criteria measure the overall strength of a mission's success drivers, which is then used to infer the IMC's likely outcome. These criteria can be used as a starting point, but also can be tailored (e.g., setting Excellent as a range of 90-100 points).

The values below are the criteria used to assign a current potential for success based on the total number of points.

Total Points	Current Potential for Success	Description
85-100	Excellent	The strength of the IMC's success drivers is very high. This is an indication that the IMC is expected to succeed.
65-84	Good	The strength of the IMC's success drivers is high. This is an indication that the IMC is more likely to be a success rather than a failure.
35-64	Borderline	The strength of the IMC's success drivers is moderate. This is an indication that the IMC is equally likely to be a success or a failure.
15-34	Poor	The strength of the IMC's success drivers is low. This is an indication that the IMC is more likely to be a failure rather than a success.
0-14	Minimal	The strength of the IMC's success drivers is very low. This is an indication that the IMC is expected to fail.

WORKSHEET

The following worksheet (see Appendix A) is required by this activity.

Type	Description
IMMD Worksheet	The primary worksheet for evaluating and scoring drivers, the rationale for the driver scores, and the final results of the IMMD

PROCESS

The following table describes the process steps for this activity.

Step	Action	Worksheets
1	Prepare for conducting the activity. The team reviews the procedure and worksheet for this activity prior to conducting it.	IMMD Worksheet
2	Review driver values and supporting data items. The team reviews each driver, its value, and the data items that were used to arrive at that value in the previous activity.	IMMD Worksheet
3	Evaluate the current IMC potential for success. Add up the scores for all drivers to produce the aggregate value using the formula described above. Review the results and verify that it passes the commonsense test. In other words, if the team has an overall impression that the IMC is adequate and you are getting a current potential for success of Poor, review your findings and data and ensure that you have not either missed significant items associated with drivers or misread the findings.	IMMD Worksheet
4	Record all data. The note-taker records data from this activity on the worksheet.	IMMD Worksheet

TEAM ROLES, SKILLS, AND KNOWLEDGE The following table summarizes the roles and skills for this activity.

Role	Skills	Knowledge
Team lead	planning skills	- detailed knowledge of the IMC and incident management domains - detailed knowledge of and experience in the IMMD
Note-taker	note-taking skills	

LOGISTICS The analysis team will need a room with adequate table space to review and discuss all data. Consideration for maintaining confidentiality of the discussions and protecting customer data is also required.

GUIDELINES AND TIPS Establishing the current potential for success is a relatively simple activity. Any difficulties that do arise are generally related to conflicts within the team, inadequate notes, or conflicting answers in the drivers. There can be a tendency to try to “improve” the score to avoid discouraging the customer. Avoid that and instead ensure that your results briefing and recommendations highlight what the organization is doing well and the strengths it can use as a foundation for improvement.

ALTERNATE POTENTIAL FOR SUCCESS FORMULAS The formula above is a simple one. Complexity can be added, if desired, in many ways. For example:

- Weighting factors for different drivers, based on a current life-cycle phase or relevance to mission success
- More (or less) than ten drivers with an adjustment of the point spans (e.g., 12 drivers with a maximum value of 10 points means Excellent would be set at a range of 105 to 120 points, etc.)
- Different thresholds of acceptability for different drivers, in which a failure to meet the threshold drops the current potential for success to a lower value

7.5 ACTIVITY A5: ESTABLISH THE IMC SUCCESS PROFILE

INTRODUCTION

This activity generates the success profile for the IMC. This includes the following:

- IMC's success threshold¹⁵ or desired potential for success; that is, the degree of success for the IMC that is desired by stakeholders and management. The success threshold separates acceptable outcomes from unacceptable outcomes.
- IMC's current potential for success, i.e., the most likely degree of success the IMC can achieve given current conditions. In other words, is the IMC likely to succeed in its mission?
- IMC's success differential or gap: the difference between the current potential for success and the success threshold. The success differential is the foundation for determining what to do next. In other words, if the current state is unacceptable, then improvements will likely be needed. If it is acceptable, then the status quo can be maintained, or additional improvements can be made.

This lays the foundation for planning improvements and next steps.

OBJECTIVES

This activity answers the following questions:

- What is the desired potential for success (i.e., success threshold) for the IMC?¹⁶
- What is the gap (success differential) between the current potential for success and the success threshold?
- What conditions and potential events are driving the gap between the current potential for success and the success threshold? How?
- To what extent is the current potential for success acceptable?

¹⁵ Note that the success threshold could be a simple predefined value or could be defined at any time using input from stakeholders. The step of establishing the success threshold is included in this activity for simplicity, as this is the latest step at which it can be defined.

¹⁶ While it may seem logical that the desired potential for success is always high, that is not always true. For example, management might decide to accept the low potential for success for a new IMC. People must use common sense when setting the desired potential for success. Every project has some amount of uncertainty; how much uncertainty is acceptable to stakeholders helps determine the desired potential for success.

DATA FLOW

The following diagram highlights the inputs and output for this activity.

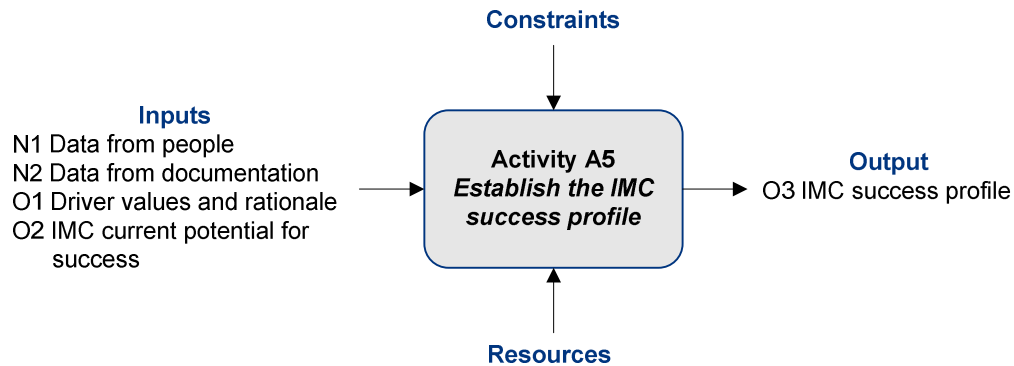


Figure 20: Data Flow for IMMD Phase 2 Activity A5

INPUTS

The following inputs are required by this activity.

Type	Description
N1 Data from people	Usable data about an IMC based on individual and group perspectives, information, and opinions about the IMC and its potential for success - Strengths – conditions, circumstances, and events that drive an IMC toward a successful outcome - Issues – conditions, circumstances, and events that drive an IMC toward an unsuccessful outcome - Improvements – suggestions for improvements to drive an IMC toward a successful outcome
N2 Data from documentation	Usable data about the IMC that is distilled from documentation, such as a concept of operations, policies, procedures, work products, and quality assurance data - Strengths – conditions, circumstances, and events that drive an IMC toward a successful outcome - Issues – conditions, circumstances, and events that drive an IMC toward an unsuccessful outcome
O1 Driver values and rationale	The current status of each driver, based on the data from people and documentation, which includes - the driver value - rationale that explains why that value was selected
O2 IMC current potential for success	A qualitative measure of the current probability, or likelihood, that the desired outcome will be achieved or exceeded

OUTPUT

The following output is produced by this activity.

Type	Description
O3 IMC success profile	Status of the current IMC's chances for success, including • measure of the current IMC potential for success • identification of the IMC success threshold • analysis of the IMC success differential

TECHNIQUES

Establishing the success threshold can be conducted during collaborative meetings with the analysis team. The success threshold can be confirmed with key stakeholders if needed. Once the success threshold is established, similar collaborative meetings with the analysis team can be conducted to perform a gap analysis of the success differential.

SETTING THE SUCCESS THRESHOLD

The success threshold is the point that separates desired from undesired outcomes – the dividing line that determines the degree of success desired for this IMC. Where the success threshold is set depends upon how much uncertainty stakeholders and management are willing to tolerate with respect to the IMC's success. In most cases, the threshold will likely be set in one of the following places:

- **above Good** – When the success threshold is set at this point, only an *excellent* measure of the potential for success is acceptable.
- **above Borderline** – When the success threshold is set at this point, measures of *excellent* and *good* are both considered to be acceptable.

Normally, any measure of *borderline* or below is considered to be unacceptable. A *borderline* potential for success is an indication that the mission's outcome is uncertain, which means that success and failure are equally likely. However, there may be circumstances in which this is an acceptable threshold, such as when an IMC is new.

If the stakeholders and managers could not provide any useful input in determining the success threshold, then the analysis team must set one based on their own judgment. As a rule of thumb, a threshold between *borderline* and *good* would be a place to start.

WORKSHEET

The following worksheet (see Appendix A) is required by this activity.

Type	Description
IMMD Worksheet	The primary worksheet for evaluating and scoring drivers, the rationale for the driver scores, and the final results of the IMMD

PROCESS

The following table describes the process steps for this activity.

Step	Action	Worksheets
1	Prepare for conducting the activity. The team reviews the procedure and worksheet for this activity prior to conducting it.	IMMD Worksheet
2	Set the IMC success threshold. Using the IMC success criteria, and any other relevant information about IMC success, decide where to set the success threshold for the IMC being evaluated. Use the same criteria described for the potential for success (i.e., Excellent, Good, Borderline, Poor, and Minimal). Additional guidance about the success threshold is provided later in this section.	IMMD Worksheet
3	Examine the current IMC potential for success in relation to the success threshold. Determine whether the IMC's likely degree of success is within tolerance by comparing it to the success threshold. The result of the comparison is the success differential or success gap.	IMMD Worksheet
4	Record all data. The note-taker records data from this activity on the worksheet.	IMMD Worksheet

TEAM ROLES, SKILLS AND KNOWLEDGE

The following table summarizes the roles and skills for this activity.

Role	Skills	Knowledge
Team lead	facilitation skills analytical skills	- detailed knowledge of the IMC and incident management domains - detailed knowledge of and experience in the IMMD
Team members	analytical skills	
Note-taker	note-taking skills	

LOGISTICS

The analysis team will need a room with adequate table space to review and discuss all data. Consideration for maintaining confidentiality of the discussions and protecting customer data is also required.

GUIDELINES AND TIPS

The most difficult part of this activity is determining the success threshold or desired potential for success. A relatively new analysis team might want to spend additional time with the customer discussing what they consider success to be, as well as failure, to determine where to establish the desired potential for success. It is also acceptable to readjust both the desired potential for success and the success differential during final discussion of the results with the customer, who may readjust their expectations based upon the results of the IMMD.

THRESHOLD VARIATIONS

Just as you may have had individual thresholds of acceptability for critical drivers, you may also find it preferable to establish individual thresholds for all of the drivers and use a collection of “driver differentials” instead of a summation. This could be more useful when the customer simply cannot define what success means for their IMC.

7.6 ACTIVITY A6: DETERMINE NEXT STEPS

INTRODUCTION

This activity identifies actions for maintaining or improving the IMC's current potential for success. Examples include

- maintain the status quo
- perform a more detailed assessment to gather more additional information relative to some drivers
- develop and implement an improvement plan

The IMC success differential (part of the success profile) from the previous activity indicates whether or not improvement is needed or desired. The analysis team identifies a strategy for next steps to close the success gap or differential, using data from the individual driver analysis. For example, if a driver related to procedure adequacy was rated Poor, then improving the quality and usability of procedures is a likely next step.

OBJECTIVES

This activity answers the following questions:

- What actions will help maintain or improve the current potential for success?
- Who is responsible for each action?
- By when must each action be completed?

DATA FLOW

The following diagram highlights the inputs and output for this activity.

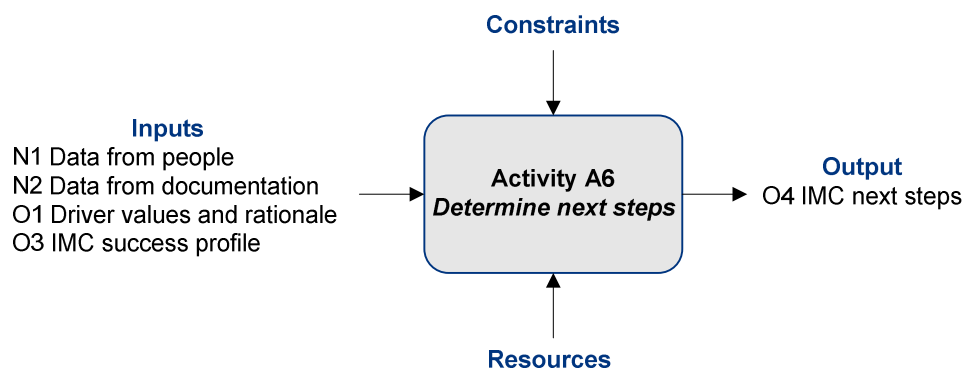


Figure 21: Data Flow for IMMD Phase 2 Activity A6

INPUTS

The following inputs are required by this activity.

Type	Description
N1 Data from people	Usable data about an IMC based on individual and group perspectives, information, and opinions about the IMC and its potential for success • Strengths – conditions, circumstances, and events that drive an IMC toward a successful outcome • Issues – conditions, circumstances, and events that drive an IMC toward an unsuccessful outcome • Improvements – suggestions for improvements to drive an IMC toward a successful outcome
N2 Data from documentation	Usable data about the IMC that is distilled from documentation, such as a concept of operations, policies, procedures, work products, and quality assurance data • Strengths – conditions, circumstances, and events that drive an IMC toward a successful outcome • Issues – conditions, circumstances, and events that drive an IMC toward an unsuccessful outcome
O1 Driver values and rationale	The current status of each driver, based on the data from people and documentation, which includes • the driver value • rationale that explains why that value was selected
O3 IMC success profile	Status of the current IMC's chances for success, including • measure of the current IMC potential for success • identification of the IMC success threshold • analysis of the IMC success differential

OUTPUT

The following output is produced by this activity.

Type	Description
O4 IMC next steps	Actions that need to be implemented by the customer organization to maintain or improve the IMC mission's current potential for success

TECHNIQUES

Brainstorming meetings can be used to identify a candidate list of actions for maintaining or improving the current potential for success.

WORKSHEET

The following worksheet (see Appendix A) is required by this activity.

Type	Description
IMC Improvement Worksheet	A simple worksheet for considering and documenting improvements

PROCESS

The following table describes the process steps for this activity.

Step	Action	Worksheets
1	Prepare for conducting the activity. The analysis team reviews all of the procedures and worksheets for this activity prior to conducting it.	
2	Brainstorm ideas for improving weak drivers. The team should use its experience and knowledge of domain practices as well as their understanding of the IMC being evaluated to produce a potential list of improvements. The improvements suggested by participants during Activity A2 should also be used as a source of ideas.	
3	Group potential improvements. Use affinity grouping or a similar technique for grouping like data items into categories of improvements. Review and revise the categories until the analysis team agrees with the results.	
4	Record all data. Document the resulting categories of improvements on the worksheet.	IMMD Improvement Worksheet

TEAM ROLES, SKILLS, AND KNOWLEDGE

The following table summarizes the roles and skills for this activity. This entire analysis team participates in this activity.

Role	Skills	Knowledge
Team lead	facilitation skills analytical skills problem-solving skills	- detailed knowledge of the IMC and incident management domains - detailed knowledge and experience in process improvement and management - detailed knowledge of and experience in the IMMD
Team members	analytical skills problem-solving skills	
Note-taker	note-taking skills	

LOGISTICS

The analysis team will need a room with adequate table space to review and discuss all data. Consideration for maintaining confidentiality of the discussions and protecting customer data is also required.

IMPORTANT GROUND RULE FOR BRIEFING

Non-attribution. It is important to continue to refrain from attributing any specific piece of information to any individual or group.

GUIDELINES AND TIPS

The IMMD Worksheet and the IMMD Improvement Worksheet comprise the essential artifacts for presentation to a customer, although the IMMD Handout can also be useful. Any additional materials, such as briefing slides, are at the discretion of the team lead.

It is important to refrain from getting into arguments with the customer about how the analysis team interpreted the results. Remind the customer that you have based the results on the data collected and the expertise of the analysis team.

8 Phase 3: Complete the Post-IMMD Activities

INTRODUCTION

Phase 3 conveys the results of the IMMD to key stakeholders and identifies actions that can help the efficiency and effectiveness of the IMMD. The IMMD findings that are communicated to stakeholders are presented in a format that meets their needs and requirements.

A postmortem identifies and documents ways in to improve the IMMD process. Updates and improvements to IMMD procedures, artifacts, tools, and training are also made as appropriate.

OBJECTIVES

Phase 3 answers the following questions:

- Who needs to know the results of the IMMD?
- What information does each stakeholder need?
- How should information be communicated to each stakeholder?
- What lessons were learned when preparing the IMMD?
- What lessons were learned when conducting the IMMD?
- How do the IMMD procedures, artifacts, tools, and training need to be updated or improved?

DATA FLOW

The following diagram highlights the data flow for this phase.

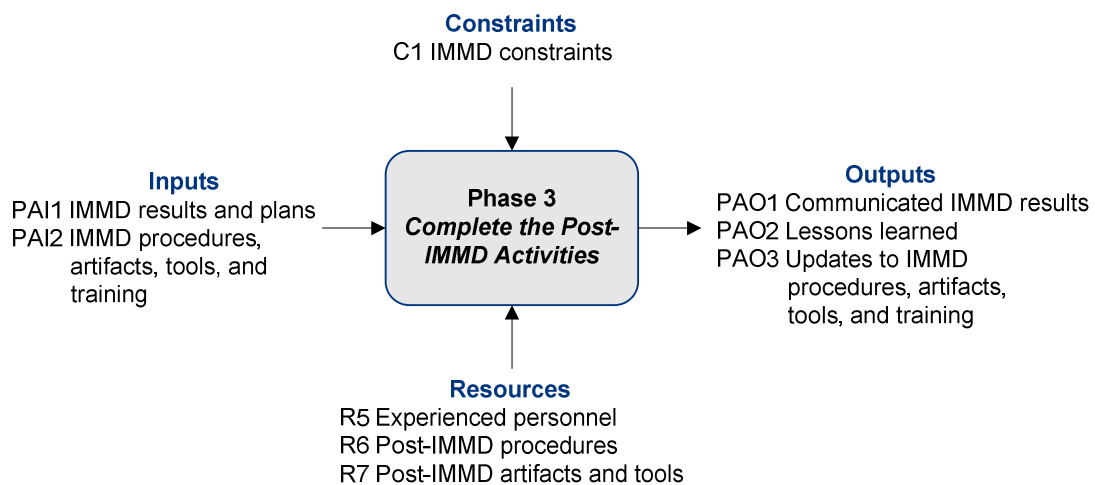


Figure 22: Data Flow for IMMD Phase 3

INPUTS

The following inputs are required by the activities performed during this phase.

Type	Description
PAI1 IMMD results and plans ¹⁷	All outputs produced by the IMMD, including findings and IMMD data, as well as plans, budget, and schedule for conducting the IMMD
PAI2 IMMD procedures, artifacts, tools, and training ¹⁸	Supporting materials used to conduct an IMMD, including procedures, worksheets, databases, and training artifacts

CONSTRAINT

The following constraint affects execution of the activities performed during this phase.

Type	Description
C1 IMMD constraints	Any circumstances that could affect the execution of the IMMD, including logistics, personnel, schedule, and cost issues

RESOURCES

The following resources support execution of the activities performed during this phase.

Type	Description
R5 Experienced personnel	People who are experienced in all phases of an IMMD
R6 Post-IMMD procedures	Documentation that describes how to conduct post-IMMD activities
R7 Post-IMMD artifacts and tools	Templates, worksheets, standard presentations, automated tools, and databases needed to conduct post-IMMD activities

¹⁷ For data flow purposes, the input PAI1 may include any of the Phase 1 and Phase 2 outputs. Depending on the circumstances, PAI1 typically includes PRO1-PRO5, N1-N2, and O1-O4, although it may also include other resources and outputs.

¹⁸ For data flow purposes, the input PAI2 may include any of the Phase 1 and Phase 2 resources and outputs, but primarily PRO6 and PRO7.

OUTPUTS

The following outputs are produced by the activities performed during this phase.

Type	Description
PAO1 Communicated IMMD results	IMMD results that have been conveyed to key stakeholders, including - driver values and rationale - IMC success profile - IMC next steps - supporting data as appropriate
PAO2 Lessons learned	Knowledge gained by conducting an IMMD that can be used to modify and improve future IMMD evaluations
PAO3 Updates to IMMD procedures, artifacts, tools, and training	Any changes, based on lessons learned, to the IMMD procedures, artifacts, tools, and training intended to improve the efficiency and effectiveness of future IMMD evaluations

KEY ACTIVITIES

The following table highlights the activities performed during this phase.

Activity	Description
PAA1 Communicate results	Convey the results of the IMMD to key stakeholders.
PAA2 Conduct postmortem of the IMMD	Conduct one or more meetings to - review the execution of the IMMD - identify strengths and weaknesses of the IMMD - document modifications and improvements to the IMMD process
PAA3 Implement improvements to the IMMD process	Make changes, based on lessons learned, to the IMMD process, including updating procedures, worksheets, artifacts, tools, and training as appropriate.

DETAILED DATA FLOW

The following figure provides a detailed data flow for IMMD Phase 3.

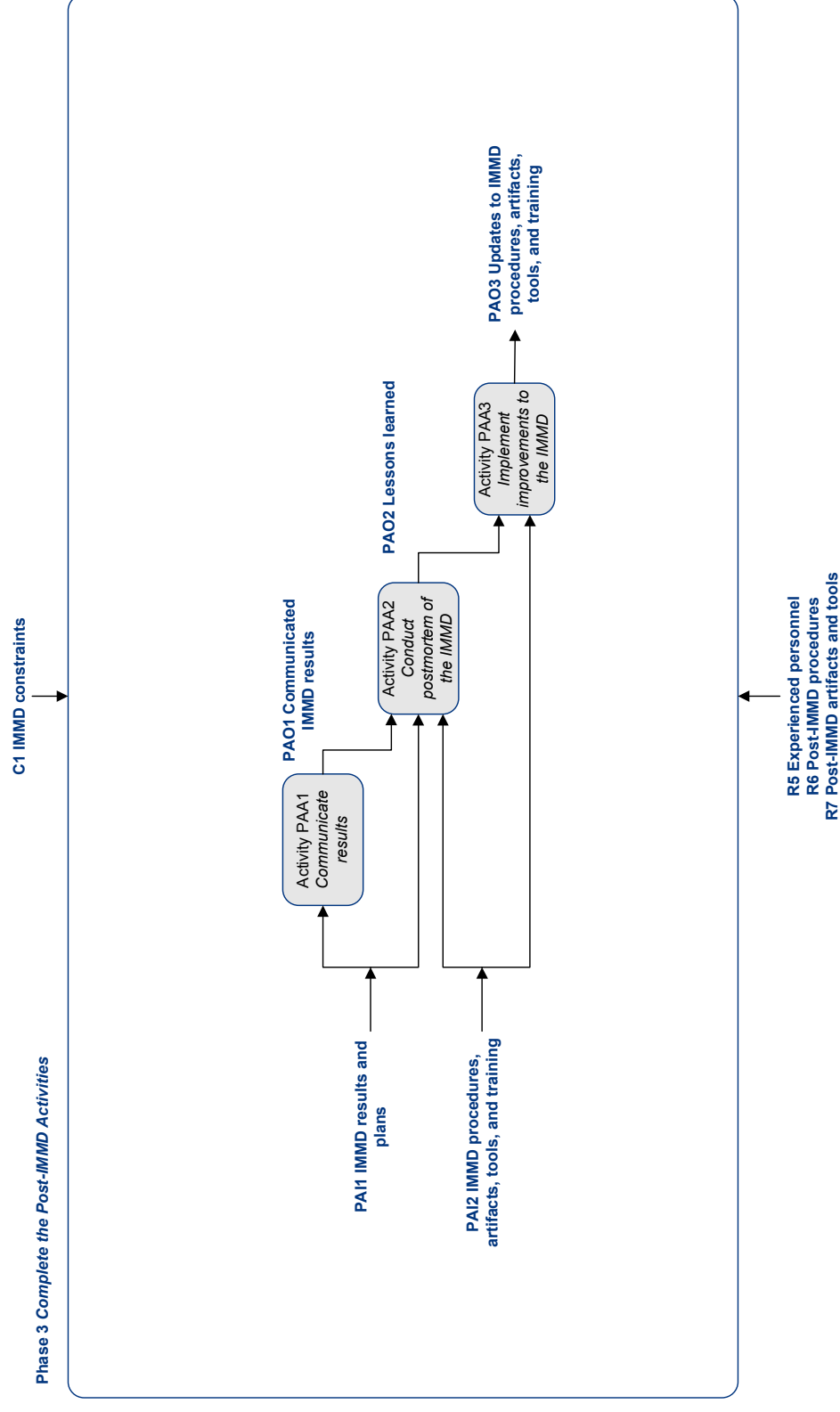


Figure 23: Detailed Data Flow for IMMD Phase 3

8.1 ACTIVITY PAA1: COMMUNICATE RESULTS

INTRODUCTION

This activity conveys the results of the IMMD to key stakeholders. The objective when communicating IMMD results to stakeholders is to present findings in a format that meets their needs and requirements. Different formats might be needed to communicate results to different types of stakeholders.

OBJECTIVES

This activity answers the following questions:

- Who needs to know the results of the IMMD?
- What information does each stakeholder need?
- How should information be communicated to each stakeholder?

DATA FLOW

The following diagram highlights the inputs and outputs for this activity.

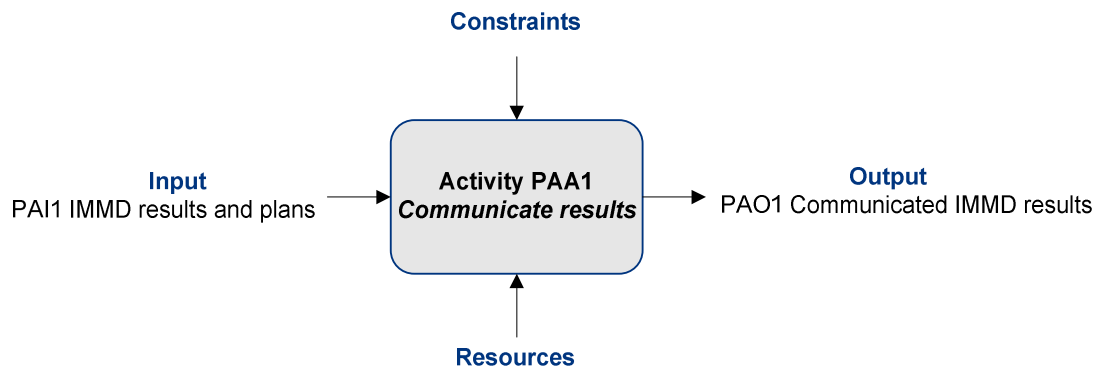


Figure 24: Data Flow for IMMD Phase 3 Activity PAA1

INPUT

The following input is required by this activity.

Type	Description
PAI1 IMMD results and plans	All outputs produced by the IMMD, including findings and IMMD data, as well as plans, budget, and schedule for conducting the IMMD

OUTPUT

The following output is produced by this activity.

Type	Description
PAO1 Communicated IMMD results	IMMD results that have been conveyed to key stakeholders, including • driver values and rationale • IMC success profile • IMC next steps • supporting data as appropriate

TECHNIQUES

Requirements for communicating IMMD results are part of the IMMD plan that is developed in Phase 1. These requirements are revisited in Phase 3 and are revised when appropriate (e.g., if new stakeholders are identified while conducting the IMMD).

WORKSHEETS

The following worksheet is used by this activity.

Type	Description
IMMD Handout	A simple handout with the drivers as questions with additional explanation
IMMD Worksheet	The primary worksheet for evaluating and scoring drivers, the rationale for the driver scores, and the final results of the IMMD
IMC Improvement Worksheet	A simple worksheet for considering and documenting improvements

Step	Action	Worksheets
1	Prepare for conducting the activity. The analysis team reviews all of the IMMD results and plans, as well as the procedures and worksheets for this activity prior to conducting it.	
2	Decide how to present results to customers. The analysis team should determine the best method for presenting the results to customer stakeholders and managers. In general, a briefing with summaries of the results along with the details is best. The needs of the customer should be considered when creating these materials (e.g., if the customer prefers to be told the bottom line first and then discuss the details, orient your materials that way).	IMMD Worksheet IMMD Improvement Worksheet

Step	Action	Worksheets
3	Present results to the stakeholders for this IMMD. The lead should present the findings to the stakeholder or customer and explain the results. The stakeholders will ultimately decide upon the appropriate next steps, using the provided recommendations.	IMMD Handout IMMD Worksheet IMMD Improvement Worksheet

TEAM ROLES, SKILLS, AND KNOWLEDGE

The following table summarizes the roles and skills for this activity. For the briefing to the customer, the entire team is not required. Note that the customer must provide stakeholders senior IMC managers for this activity.

Role	Skills	Knowledge
Team lead	presentation skills	- detailed knowledge of the IMC and incident management domains - detailed knowledge of and experience in the IMMD - detailed knowledge of the results of this IMMD

LOGISTICS

The following must be considered:

- Stakeholders and managers need to be scheduled for a briefing of the results.
- Facilities, supplies, and equipment for the briefing (e.g., room, laptops, projector) must be available and must have been reserved.

8.2 ACTIVITY PAA2: CONDUCT POSTMORTEM OF THE IMMD

INTRODUCTION

This activity conducts one or more postmortem meetings to identify the strengths and weaknesses of the IMMD and document modifications and improvements to the IMMD process. The improvements can include how activities are conducted, scheduling, worksheets, and team skills.

OBJECTIVES

This activity answers the following questions:

- What lessons were learned when preparing the IMMD?
- What lessons were learned when conducting the IMMD?

DATA FLOW

The following diagram highlights the inputs and outputs for this activity.

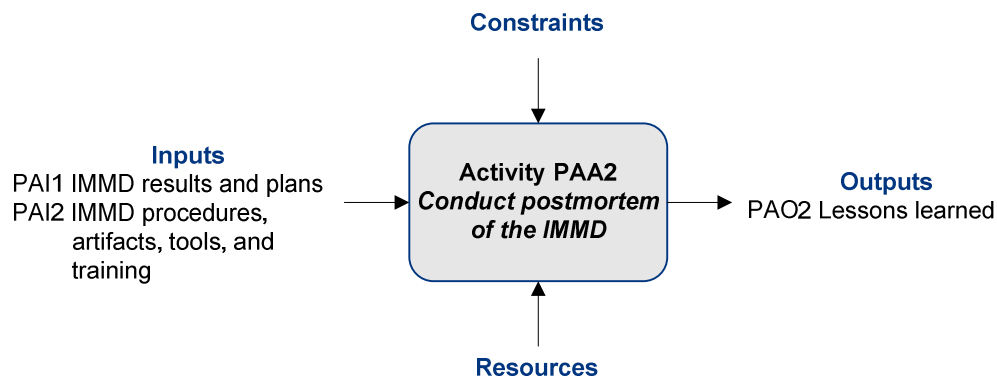


Figure 25: Data Flow for IMMD Phase 3 Activity PAA2

INPUTS¹⁹

The following inputs are required by this activity.

Type	Description
PAI1 IMMD results and plans	All outputs produced by the IMMD, including findings and IMMD data, as well as plans, budget, and schedule for conducting the IMMD
PAI2 IMMD procedures, artifacts, tools, and training	Supporting materials used to conduct an IMMD, including procedures, worksheets, databases, and training artifacts

¹⁹ As any part of the IMMD can be reviewed for improvements, all of the IMMD outputs may be a part of this review. All of the knowledge and experience of the team members relative to this execution of the IMMD method is also essential.

OUTPUT

The following output is produced by this activity.

Type	Description
PAO2 Lessons learned	Knowledge gained by conducting an IMMD that can be used to modify and improve future IMMD evaluations

TECHNIQUES

Whenever a method such as the IMMD is conducted, it is important to consider afterwards what worked well and what needed improvement. Conducting a postmortem can be accomplished in a variety of ways; this section describes one of them. The important point is to actually conduct such a review and implement needed improvements, so the next IMMD can be performed more efficiently and effectively.

Postmortems are usually conducted after a given IMMD. However, they can also be held on a more periodic basis if multiple IMMDs are planned.

WORKSHEET

There are no specific worksheets for this activity; however, the same improvement worksheet used for documenting customer IMC improvements can also be used here for IMMD improvements.

Type	Description
IMC Improvement Worksheet	A simple worksheet for considering and documenting improvements

PROCESS

The following table describes the process steps for this activity.

Step	Action	Worksheets
1	Prepare for conducting the activity. The analysis team reviews all of the outputs and products for the IMMD as well as any additional notes they may have.	
2	Conduct a round-robin discussion of what worked well in this execution of the IMMD. Working through the team in any order, each team member proposes an item about something that worked particularly well. Continue cycling through the team until there are no more ideas.	

Step	Action	Worksheets
3	Conduct a round-robin discussion of what did not work well in this execution of the IMMD. Working through the team in any order, each team member proposes an issue about something that did not work well. Continue cycling through the team until there are no more ideas.	
4	Group the issues into categories, looking for patterns and similar items. A predefined structure (such as the activities in the IMMD) can be used, or a technique such as affinity grouping that allows a structure to emerge can be used. Record these categories on the worksheet.	IMC Improvement Worksheet can be used

TEAM ROLES, SKILLS AND KNOWLEDGE

This following table describes the knowledge and skills needed for this activity.

Role	Skills	Knowledge
Team lead	facilitation skills analytical skills problem-solving skills	- detailed knowledge and experience in process improvement and management - detailed knowledge of and experience in the IMMD
Team members	analytical skills problem-solving skills	
Note-taker	note-taking skills	

LOGISTICS

The team will need a room with sufficient table space and the ability to either capture notes visibly (e.g., with flip charts) or project notes from a computer.

GUIDELINES AND TIPS

Depending upon the number of IMMDs performed, this postmortem could be done after each IMMD or periodically. Any serious flaw should be addressed prior to the next IMMD. Additionally, anything that went seriously wrong during the IMMD needs to be addressed and corrected as soon as possible to avoid detrimental effects on the results.

8.3 ACTIVITY PAA3: IMPLEMENT IMPROVEMENTS TO THE IMMD PROCESS

INTRODUCTION

This activity makes changes, based on lessons learned, to the IMMD process, including updates to the procedures, artifacts, tools, and training as appropriate.

OBJECTIVES

This activity answers the following question:

- How do the IMMD procedures, artifacts, tools, and training need to be updated or improved?

DATA FLOW

The following diagram highlights the inputs and outputs for this activity.

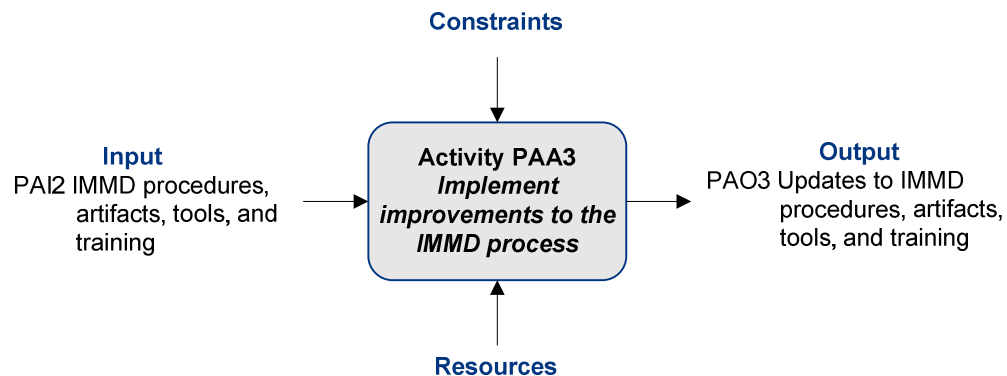


Figure 26: Data Flow for IMMD Phase 3 Activity PAA3

INPUTS

The following inputs are required by this activity.

Type	Description
PAI1 IMMD results and plans	All outputs produced by the IMMD, including findings and IMMD data, as well as plans, budget, and schedule for conducting the IMMD
PAI2 IMMD procedures, artifacts, tools, and training	Supporting materials used to conduct an IMMD, including procedures, worksheets, databases, and training artifacts

OUTPUT

The following output is produced by this activity.

Type	Description
PAO3 Updates to IMMD procedures, artifacts, tools, and training	Any changes, based on lessons learned, to the IMMD procedures, artifacts, tools, and training intended to improve the efficiency and effectiveness of future IMMD evaluations

TECHNIQUES

Issues identified during an IMMD postmortem should be prioritized and assigned to appropriate team members for action. Some issues may require improvement plans to be developed and approved before those changes can be implemented. It may be appropriate for other improvements to be made immediately.

WORKSHEET

There are no specific worksheets for this activity; however, the same improvement worksheet used for documenting customer IMC improvements can also be used here for IMMD improvements.

Type	Description
IMC Improvement Worksheet	A simple worksheet for considering and documenting improvements

PROCESS

The following table describes the process steps for this activity.

Step	Action	Worksheets
1	Prepare for conducting the activity. The analysis team reviews all of the lessons learned from the IMMD postmortem as well as any additional notes they may have.	IMC Improvement Worksheet can be used
2	Decide which categories of issues to work on. Prioritize the issues according to criticality, cost, effort, schedule, or some other set of priorities. Recognize that not all issues may be able to be solved with a reasonable amount of time and effort.	
3	Assign issue categories to appropriate team members. Team members should develop improvement plans for the issue assigned to them. Alternatively, the team lead could assign all of the selected issue categories to a subset of the team to develop improvement plans.	
4	Review and revise improvement plans. The team or team lead should review the recommended improvement plans and make any final revisions before deciding to proceed.	

Step	Action	Worksheets
5	Implement improvement plans. The final essential step is to actually implement the improvement plans, as opposed to letting them sit on a shelf.	

TEAM ROLES, SKILLS AND KNOWLEDGE

This following table describes the knowledge and skills needed for this activity.

Role	Skills	Knowledge
Team lead	facilitation skills analytical skills problem-solving skills	- detailed knowledge and experience in process improvement and management - detailed knowledge of and experience in the IMMD
Team members	analytical skills problem-solving skills	
Note-taker	note-taking skills	

LOGISTICS

If further meetings are required, the team will need a room with sufficient table space and the ability to either capture notes visibly (e.g., with flip charts) or project notes from a computer.

GUIDELINES AND TIPS

Anything that went seriously wrong during the IMMD needs to be addressed and corrected as soon as possible.

9 Summary

This first version of the Incident Management Mission Diagnostic (IMMD) Method, derived from the Mission Diagnostic Protocol, Version 1.0, presents a risk-based approach for determining the potential for success of an organization's incident management capability (IMC). Using a limited set of key drivers to estimate the current IMC health relative to a defined benchmark, the IMMD Method establishes an IMC success profile and identifies actions for maintaining or improving the IMC's current potential for success. This method has been piloted with a number of organizations.

As we continue to pilot and develop the IMMD Method with additional organizations, further refinements to the IMMD techniques, methods, artifacts, and worksheets presented here are expected. We welcome your comments or feedback on this work.

Appendix A Collected Worksheets

IN THIS APPENDIX

This appendix has a set of worksheets and instructions for use with the IMMD activities. Each worksheet has descriptive information relative to its use as well as a set of instructions. Some worksheets, notably the *IMMD Worksheet*, have extensive instructions. When sample answers are used to illustrate points in the instructions, the answers are in italics. In addition, the worksheets themselves are in a dark blue font when viewed in a color medium.

WORKSHEETS

The worksheets in this appendix are

- A1. IMMD Preparation Checklist
- A2. IMMD Scope List
- A3. IMMD Questionnaire
- A4. IMMD Handout
- A5. IMMD Document Checklist
- A6. IMMD Worksheet
- A7. IMC Improvement Worksheet

A1: IMMD Preparation Checklist

PURPOSE

This checklist is used as an aid in preparing for the IMMD. It is generally used to assist the analysis team leader during initial customer meetings with stakeholders and IMC managers in planning the IMMD.

GUIDANCE

The following general guidelines apply to using this worksheet for planning the IMMD:

- Use this as a checklist to ensure that all items have been covered with the stakeholders and managers.
- Agendas for meetings or teleconferences with stakeholders and managers can be derived from this checklist.
- The lead should have sufficient skills at working with management and setting up meetings to conduct this step. This method description does not address those types of skills.

IMMD Preparation Checklist (page 1)	
Item	Status
1 Gather IMC information as soon as possible. Consider • organization chart with functions and responsibilities as well as names • general process or work flows for major IMC functions such as protect, detect, respond, and sustain • IMC concept of operations or similar mission- and purpose-related documents • roles, responsibilities, and interfaces for all IMC personnel	
2 Set up initial meeting with stakeholders and IMC managers, and, as needed, managers of contractors and service providers.	
3 Identify constraints on schedules, resources, logistics, etc. that can affect IMMD activities. Consider • security access issues • documentation that cannot be removed • conference or meeting rooms with adequate privacy • personnel availability • expected times of unavailability or unusual workloads • constraints of analysis team members	
4 Identify any on-site and analysis team logistics coordinators.	
5 Verify common understanding of purpose and scope of IMMD and the results.	
6 Discuss and assign any actions.	
7 Discuss, in concrete terms, what constitutes success and failure for the IMC from the perspectives of the stakeholders and managers.	
8 If possible, identify general schedule milestones.	
9 Train and prepare the analysis team to conduct the IMMD.	
10 Tailor all IMMD procedures, criteria, and supporting artifacts for the IMC to be assessed.	

A2: IMMD Scope List

PURPOSE

This simple list documents the scope of the IMMD.

GUIDANCE

Determine scope of the IMMD using data collected and discussions with stakeholders and managers. Decide which IMC functions, and thus which IMC groups and people, should be included in the activity *A1 Gather data from people*. Also consider

- contractors and service providers
- off-site or distantly located groups
- interfaces to groups that will not be included
- constituents or customers of the IMC

A3: IMMD Questionnaire

PURPOSE

This questionnaire is used during the interviews of the activity *Gather data from people*. There are several ways this questionnaire can be used, including:

- Participants fill in the questionnaire, discuss their answers with the analysis team, and turn in their questionnaires.
- Analysis team leads a discussion using the questionnaire and gets a consensus answer from the participants for each item.

How the questionnaire is used depends upon the participants, the customer, and the preferences of the analysis team.

INSTRUCTIONS FOR ANALYSIS TEAM

The following table provides instructions for the analysis team using the questionnaire. There are sufficient instructions with the questionnaire to use it as a handout. When used in this way, the analysis team should also discuss the participants' answers with them. In the instructions below, for the analysis team, this variation is described in Step 2b. The analysis team can also use the questionnaire as guidance for asking detailed questions related to the drivers. Step 2a is used when the questionnaire is not handed out.

Step	Action
1	Begin the interview session. Welcome participants and remind them why they are there. Explain to participants that they should provide honest, open answers to the questions. Remind them that nothing will be attributed to them afterward.
2a	Ask participants each question on the questionnaire. Ask them to justify or support the rationale for each of their answers. Ensure that each participant provides an answer to the question, and probe for differences of opinion. This should take approximately 45 minutes. Note that the IMMD Handout can also be used for additional, detailed questions if participants seem to be having difficulty understanding the questionnaire items.
2b	Hand the questionnaire out to the participants. Explain how to fill in the questionnaire and ask them to do so individually. Once they have completed the questionnaire, discuss their answers with them, and gather additional supporting information, their rationale for their answers, and any conflicts or disagreements. Be sure to collect the completed questionnaires at the end of the interview. Note that the IMMD Handout can also be used for additional, detailed questions if participants seem to be having difficulty understanding the questionnaire items.

Step	Action
3	Ask a final set of questions. A final set of questions is asked to gather any additional information that could go beyond the drivers but also may provide valuable information. Ask these questions and be sure to get answers from each participant: • What other factors are helping you successfully meet the IMC's mission and objectives? • Are there any other issues or concerns that could negatively affect achieving the IMC's mission and objectives? • If there were one thing you could improve, what would it be?
4	Close the interview session. If the questionnaires were handed out, collect them. Thank the participants for their help and ask them not to discuss what occurred or what questions were asked with others.

IMMD Questionnaire Directions

GENERAL INSTRUCTIONS

First, you will answer questions in relation to your organization's incident management capability (IMC) and record your answers on the worksheet. Second, you will discuss your answers, and your rationale for those answers, with the analysis team. Read the instructions in full and review the sample before completing the worksheet.

Step	Action																					
1	Answer the driver questions. Using the IMMD Worksheet on the next page, answer all ten driver questions using the five-point scale described below. Ask for additional explanations about the driver questions, if needed. <table border="1"> <thead> <tr> <th>No</th><th>Likely No</th><th>Equally Likely Yes or No</th><th>Likely Yes</th><th>Yes</th></tr> </thead> <tbody> <tr> <td colspan="5"> </td></tr> <tr> <td> - The answer is almost certainly No - Very little uncertainty exists </td><td> - The answer is most likely No - There is some uncertainty </td><td> - The answer could be either Yes or No - A high degree of uncertainty exists </td><td> - The answer is most likely Yes - There is some uncertainty </td><td> - The answer is almost certainly Yes - Very little uncertainty exists </td></tr> </tbody> </table>	No	Likely No	Equally Likely Yes or No	Likely Yes	Yes						- The answer is almost certainly No - Very little uncertainty exists	- The answer is most likely No - There is some uncertainty	- The answer could be either Yes or No - A high degree of uncertainty exists	- The answer is most likely Yes - There is some uncertainty	- The answer is almost certainly Yes - Very little uncertainty exists						
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2	Mark your answers. Mark your answer with an 'X' for each of the driver questions, using the sample below as an example. Selecting <i>Likely Yes</i> for this question means that there are strong indications that this IMC's goals are well-defined and understood by personnel, stakeholders, and customers. <table border="1"> <thead> <tr> <th>Driver Question</th><th>Answer</th></tr> </thead> <tbody> <tr> <td></td><td> <table border="1"> <thead> <tr> <th>No</th><th>Likely No</th><th>Equally Likely Yes or No</th><th>Likely Yes</th><th>Yes</th></tr> </thead> </table> </td></tr> <tr> <td>1. Are the IMC's goals realistic and well-articulated?</td><td> <table border="1"> <thead> <tr> <th>No</th><th>Likely No</th><th>Equally Likely Yes or No</th><th>Likely Yes</th><th>Yes</th></tr> </thead> <tbody> <tr> <td colspan="5"> </td></tr> </tbody> </table> </td></tr> </tbody> </table>	Driver Question	Answer		<table border="1"> <thead> <tr> <th>No</th><th>Likely No</th><th>Equally Likely Yes or No</th><th>Likely Yes</th><th>Yes</th></tr> </thead> </table>	No	Likely No	Equally Likely Yes or No	Likely Yes	Yes	1. Are the IMC's goals realistic and well-articulated?	<table border="1"> <thead> <tr> <th>No</th><th>Likely No</th><th>Equally Likely Yes or No</th><th>Likely Yes</th><th>Yes</th></tr> </thead> <tbody> <tr> <td colspan="5"> </td></tr> </tbody> </table>	No	Likely No	Equally Likely Yes or No	Likely Yes	Yes					
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IMMD Questionnaire (page 1)					
Driver Question	Answer				
	No	Likely No	Equally Likely Yes or No	Likely Yes	Yes
1. Are the IMC's goals realistic and well-articulated?	-----	-----	-----	-----	-----
2. Are communications and information sharing about IMC activities effective?	-----	-----	-----	-----	-----
3. Are customer requirements and needs well understood?	-----	-----	-----	-----	-----
4. Are organizational and political conditions facilitating completion of IMC activities?	-----	-----	-----	-----	-----
5. Does the operational process support efficient and effective execution?	-----	-----	-----	-----	-----
6. Does IMC management facilitate execution of tasks and activities?	-----	-----	-----	-----	-----
7. Is task execution efficient and effective?	-----	-----	-----	-----	-----
8. Are staffing and funding sufficient to execute all IMC activities?	-----	-----	-----	-----	-----
9. Are the technological and physical infrastructures adequate to support all IMC activities?	-----	-----	-----	-----	-----
10. Are changing circumstances and unpredictable events effectively managed?	-----	-----	-----	-----	-----

A4: IMMD Handout

PURPOSE

This handout briefly describes the drivers. It also provides additional explanation and possible subquestions for the drivers.

GUIDANCE

The analysis team can give this handout to participants as a reminder of what the drivers are. They can also hand it out during customer meetings and interviews to familiarize others with the range of information used in this method. Finally, the subquestions can be used as probing questions by the interviewer to gather information about the drivers.

IMMD Handout		
Driver Question	Explanation	Subquestions
1. Are the IMC's goals realistic and well-articulated?	- Considers issues related to the overarching mission, such as - IMC goals are inherently risky, such as, using unprecedented type of technology or unrealistic expectations - IMC goals are understood by all personnel, stakeholders, customers, and so on	- Do all personnel, stakeholders, and constituents understand the goals of the IMC? - Are the goals of the IMC documented and available to all? - Are there particular aspects of this IMC's goals that pose unusual levels of risk to the organization? - Are the IMC's goals practical and achievable? Are they inherently risky? - Is the funding sufficient to complete the IMC's objectives? - Is the schedule sufficient to complete the IMC's objectives?
2. Are communication and information sharing about IMC activities effective?	Looks at organizational and cultural enablers or barriers that affect the sharing of information, for example, stove-pipes, disjoint locations, undocumented "rules"	- Is it easy to communicate with other personnel in the IMC or with the constituency? - Is the appropriate information readily and effectively communicated between IMC personnel and groups? - Are some groups reluctant or careless about sharing information? - Are communications from management clear, concise, and to the point about what needs to be done? - Are some groups geographically separate from others? If yes, are there good communication channels for effective exchange of information?

IMMD Handout		
Driver Question	Explanation	Subquestions
3. Are customer requirements and needs well understood?	• Considers whether IMC will provide customers (constituents and other stakeholders) with the products and services they require • Also considers whether the IMC's understanding of customer needs is adequate	• Do IMC personnel understand the needs of constituents? • Are constituent requirements documented and understood by all IMC managers and personnel? • Have the constituents accepted or agreed to the requirements? • Will the products and services of the IMC meet the constituent's requirements? • Are constituents and stakeholders surveyed to gauge their satisfaction with IMC services? • Are the expectations of stakeholders communicated and understood by IMC personnel and managers?
4. Are organizational and political conditions facilitating completion of IMC activities?	• Considers whether stakeholders, managers, or customers exert any negative influence over the IMC process, which can ultimately affect performance. Examples include – a stakeholder who redirects resources or changes requirements – a manager who rewards based on personality and not productivity – a constituent group that deliberately slow-rolls their actions	• Do stakeholders force unrealistic changes to the IMC's goals? • Do stakeholders create unexpected demands on IMC personnel? • Are there external pressures driving IMC decisions? • Do stakeholder actions have a negative influence on project performance? • Will constituents resist following IMC guidance or directives? • Does IMC management interfere with completion of work tasks? • Does the organization reward the wrong behaviors?

IMMD Handout

Driver Question	Explanation	Subquestions
5. Does the operational process support efficient and effective execution?	• Focuses on whether execution of IMC tasks or activities are adversely affected by the process design or other issues, such as – process bottlenecks (e.g., too many approvals) – overly complex process – unnecessary tasks performed – insufficient staffing at key points – unrealistic timing requirements	• Does the operational process(es) for IMC activities address all IMC products and services? • Are all IMC personnel knowledgeable about the operational process(es)? • Are IMC roles and responsibilities documented and communicated? • Is funding sufficient to support the operational process? • Is staffing sufficient to support the operational process? • Is the operational process designed to support effective and efficient execution of all critical IMC activities? For example – excessive approvals for release of notices and – process growth and expansion without commensurate review of the usefulness or efficiency – appropriate access to data and other resources as needed – duplicate or missing work – appropriate scheduling and timing constraints
6. Does IMC management facilitate execution of tasks and activities?	• Considers whether execution of work processes is adversely affected by – insufficient mechanisms for controlling the process – ineffective management of the process – inadequate information about the effectiveness of work processes	• Is there sufficient oversight and management of the IMC? • Is responsibility for overseeing the IMC appropriately assigned? • Is the quality of products and services measured or reviewed? • Do managers make timely and appropriate decisions?

IMMD Handout		
Driver Question	Explanation	Subquestions
7. Is task execution efficient and effective?	Looks for signs that people are able to effectively complete their work tasks	- Do people have sufficient knowledge, skills, and abilities to execute tasks and activities efficiently and effectively? - Is effort wasted on any tasks? - Are people usually able to meet their schedules? - Are spikes in resource demands becoming commonplace? - Do certain tasks have persistent quality issues?
8. Is staffing sufficient to execute all IMC activities?	- Considers whether process execution is adversely affected by - systemic staffing problems throughout the process - gaps in necessary knowledge, skills, and abilities	- Do people have sufficient knowledge, skills, and abilities to complete their tasks efficiently and effectively? - Are IMC personnel full-time? - Are there single points of failure in critical areas of skill or knowledge (e.g., one person the IMC cannot afford to lose)? - Is there a contingency plan for IMC staffing? - Are IMC personnel able to get needed training to advance their skills and knowledge in the face of changing threats and technology?

IMMD Handout		
Driver Question	Explanation	Subquestions
9. Are the technological and physical infrastructures adequate to support all IMC activities?	Focuses on issues related to the computing infrastructure, equipment, and facilities, such as having the necessary tools to support development or sufficient office space	- Does the IMC have the components, technology, tools, etc. that it needs to do its job? - Do people have the technology they need to perform their activities? - Is the execution of IMC tasks or activities constrained by limitations related to the technological or physical infrastructure? - Have critical infrastructure purchases been unnecessarily delayed? - Does the IMC have sufficient physical space to conduct its activities effectively and in a secure manner, maintaining privacy and security of constituent data?
10. Are changing circumstances and unpredictable events effectively managed?	- Focuses on whether tasks or activities are adversely affected by unpredictable events or changing circumstances, such as - cyber and physical security events - loss of key personnel - changes in funding or schedule - changes in policy and practice	- Can the IMC handle a spike in workload? - Can the IMC adjust to sudden changes in management or IMC goals? - Can the IMC adjust to sudden changes in critical personnel? Is there a training program in place to ensure depth of critical knowledge? - Can the IMC adjust to sudden changes in schedules or timing requirements? - Can the IMC adjust to sudden changes in funding? - Does the IMC have a contingency plan for the loss of key personnel? - Does the IMC have a business continuity plan? Can critical IMC functionality be rapidly reconstituted in another location?

A5: IMMD DOCUMENT CHECKLIST

PURPOSE

This checklist is used by the analysis team while reviewing documentation for items relevant to the IMMD. There are two parts. Part 1 is a suggested list of the types of documentation that could be reviewed. Not all of these documents need to be reviewed; instead, select carefully the documents needed to support evaluation of this IMC. In general, select documents relative to the drivers that can provide clarifying or supporting information to what is said in the interviews of the activity *A1 Gather data from people*.

Part 2 is a general checklist for any document that is reviewed. Note that there may be specific questions for some documents based on information gathered during interviews. For example, the analysis team may want to know if the IMC business continuity or disaster recovery plan includes a backup site for IMC databases and critical tools.

GUIDANCE

No single checklist can address all of the relevant information for each type of document that could be collected for review during this method. As this is intended to be a time-efficient method, document review should be relatively swift, searching for information that can support findings of success or failure drivers. For example, adequate IMC task execution would be supported by well-documented, easily understood procedures. If procedures are missing or poorly documented, then tasks may be executed inconsistently or randomly.

Step	Action
1	Review documents. Review each document against the checklist.
2	Record notes. Capture notes about anything that would drive the IMC toward success or failure. There is no fixed format for these notes, other than that they should be clear, concise, and sufficiently worded to enable other team members to understand them.

IMMD Document Checklist (Part 1)

The following types of documents may be used in the IMMD:

- policies and plans, such as
 - risk assessment
 - periodic testing and auditing of agency security
 - incident reporting
 - patch management
 - business continuity plan or disaster response
- procedures, such as
 - incident management concept of operations
 - risk assessment
 - vulnerability scanning
 - trend analysis
 - malware reporting requirements
 - patch management
 - intrusion detection systems (IDS)
 - updating router/firewall configurations
 - constituency reporting guidelines
 - guidance for performing operational exercises
 - guidance for validating current policies and procedures
 - guidance from law enforcement and intelligence communities
- miscellaneous documents, such as
 - risk assessment results
 - description of tools used
 - criteria for disseminating information
 - point of contact lists
 - proof of authorization to install tools and perform scans
 - constituent request forms
 - outputs of tools such as vulnerability scanning results, trend analysis reports, vulnerability database output, virus infection reports and statistics
 - ETA requirements for incident management personnel
 - training presentations and educational materials
 - records of patches that have been installed
 - samples of logs, alerts, warnings, and reports

IMMD Document Checklist (Part 2)

Usefulness of document

- Does it meet its stated purpose?
- Can it be easily used by its intended audience?
- Is it readable, clear, easy to follow, and well-organized?

Completeness

- Does it address the appropriate functions in sufficient detail?
- Does it include, as required, roles, responsibilities, activities, data exchange requirements, etc.?
- Does it include references to other related documents where needed?

Timeliness

- Is the document recent and up to date?
- Does it appear to have been kept up to date, or does it contain old, outdated information?
- Is there a change record or date that provides any information on when it was last updated?

Formality

- Is it an actual formal document, with approval signatures and change tracking?
- Is it someone's personal document or checklist that only they use?
- Is it an informal document that has become a de-facto standard?
- Is it a hand-written document?

Relevance: Given the answers to the above questions:

- Is this document relevant to any of the drivers?
- Does it represent a strength or a weakness for that driver?
- Will it help drive the IMC toward success or failure?

A6: IMMD WORKSHEET

PURPOSE

This is the primary worksheet for the IMMD method. It supports two activities.

- *A3 Evaluate drivers*: reviewing information gathered from people and documentation to find data items relative to each driver and evaluating the drivers based on the relevant data items
- *A5 Establish the IMC success profile*: identifying and documenting the current IMC potential for success, the success threshold, and the success differential

GUIDANCE

As this worksheet collects the majority of the critical information for the IMMD method, the analysis team should be very familiar with using it before executing this method.

Recognize that there is a certain amount of iteration between the activities *A3 Evaluate drivers* and *A5 Establish the IMC success profile*, as continued review and discussion of data items and driver values can result in some late changes.

There are many instructions for this worksheet. Read all of them before using the worksheet. There are two main sections in the worksheet, found after the instructions. The first two pages provide a summary of the driver values, the current IMC potential for success, and the success differential. The second section is a place for capturing the supporting details (rationale) for each of the drivers.

IMMD Worksheet Instructions

During Activity A3 Evaluate Drivers

Step	Action										
1	Review all data. Review the data gathered from people and documentation during the activities A1 <i>Gather data from people</i> and A2 <i>Gather data from documentation</i> .										
2	Extract important data items that drive the IMC toward success or failure. Consider the drivers and whether or not a data item will support a Yes or No answer to the driver question. For example, if there is no business continuity or disaster recovery plan for the IMC, would that lead to a Yes or No answer for, "Are changing circumstances and unpredictable events effectively managed?"										
3	Using the IMMD Worksheet, Driver Details (pages 3-7), assign the data items to the most appropriate driver, as shown below.										
8. Are staffing and funding sufficient to execute all IMC activities? Rationale: <table> <tr> <td>Value (+, 0, -, ?)</td><td>Data Item</td></tr> <tr> <td>-</td><td>There are insufficient senior analysts to perform advanced analyses.</td></tr> </table>		Value (+, 0, -, ?)	Data Item	-	There are insufficient senior analysts to perform advanced analyses.						
Value (+, 0, -, ?)	Data Item										
-	There are insufficient senior analysts to perform advanced analyses.										
Step	Action										
4	Assign a value to each data item. Assign values according to the data item values (i.e., +, 0, -, or ?), as shown above.										
5	Record all data items and their values. Record this information under the appropriate driver under the Driver Details sections of the IMMD Worksheet (pages 3-7).										
	<table> <tr> <th>Data Item Value</th><th>Effect on IMC Mission</th></tr> <tr> <td>+</td><td>positive influence and is driving the IMC toward success (success driver)</td></tr> <tr> <td>-</td><td>negative influence and is driving the IMC toward failure (failure driver)</td></tr> <tr> <td>0</td><td>no perceived influence and is not driving the IMC toward either success or failure (neutral driver)</td></tr> <tr> <td>?</td><td>could be significant to either success or failure of the IMC but significance cannot currently be determined (unknown driver)</td></tr> </table>	Data Item Value	Effect on IMC Mission	+	positive influence and is driving the IMC toward success (success driver)	-	negative influence and is driving the IMC toward failure (failure driver)	0	no perceived influence and is not driving the IMC toward either success or failure (neutral driver)	?	could be significant to either success or failure of the IMC but significance cannot currently be determined (unknown driver)
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0	no perceived influence and is not driving the IMC toward either success or failure (neutral driver)										
?	could be significant to either success or failure of the IMC but significance cannot currently be determined (unknown driver)										

IMMD Worksheet Instructions (cont.)

During Activity A3 Evaluate Drivers (cont.)

EVALUATING DRIVERS

Each driver represents a mission driver that can guide an IMC toward success or failure. The following figure shows the five-point scale used to evaluate each driver and also defines each of the five possible choices. A response of “yes” indicates that the driver is guiding the mission toward a successful outcome, while a response of “no” indicates that the driver is guiding the mission toward an unsuccessful outcome. Responses in between the two extremes indicate some degree of uncertainty regarding how the driver is affecting the mission.

Step	Action																					
6	Determine driver question answers. Using the IMMD Worksheet, Driver Details (pages 3-7), identify answers for all ten drivers using the five-point scale described below. Refer to the IMMD Handout for additional explanations about the driver questions, if needed.																					
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Step	Action																					
7	Mark the answers. Use the Driver Details (pages 3-7) section of the IMMD Worksheet with an 'X' for each of the drivers, using the sample below as an example.																					
	<table><tr><th>Driver Question</th><th>Answer</th></tr><tr><td></td><td><table><tr><td>No</td><td>Likely No</td><td>Equally Likely Yes or No</td><td>Likely Yes</td><td>Yes</td></tr><tr><td colspan="5"> ----- ----- ----- ----- </td></tr></table></td></tr><tr><td>1. Are the IMC's goals realistic and well-articulated?</td><td><table><tr><td></td><td></td><td></td><td>X</td><td></td></tr></table></td></tr></table>	Driver Question	Answer		<table><tr><td>No</td><td>Likely No</td><td>Equally Likely Yes or No</td><td>Likely Yes</td><td>Yes</td></tr><tr><td colspan="5"> ----- ----- ----- ----- </td></tr></table>	No	Likely No	Equally Likely Yes or No	Likely Yes	Yes	----- ----- ----- -----					1. Are the IMC's goals realistic and well-articulated?	<table><tr><td></td><td></td><td></td><td>X</td><td></td></tr></table>				X	
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			X																			
8	Review the answers for all drivers and revise or adjust as needed. You should discuss any inconsistencies between answers for driver question or data items and ensure there are no conflicts. When you are satisfied with your answers, also mark the answers for each driver on the IMMD Worksheet summary on page 1.																					

IMMD Worksheet Instructions (cont.)

During Activity A3 Evaluate Drivers (cont.)

Step	Action																			
9	Identify the driver value associated with the answer. Each driver answer on the worksheet will have an individual value of 0, 2.5, 5, 7.5, or 10. Find the equivalent value for each driver using the table below for reference.																			
	<table><tr><th>No</th><th>Likely No</th><th>Equally Likely Yes or No</th><th>Likely Yes</th><th>Yes</th></tr><tr><td> ----- ----- ----- ----- </td><td></td><td></td><td></td><td></td></tr><tr><td>0</td><td>2.5</td><td>5</td><td>7.5</td><td>10</td></tr></table>	No	Likely No	Equally Likely Yes or No	Likely Yes	Yes	----- ----- ----- -----					0	2.5	5	7.5	10				
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Step	Action																			
10	Write the numeric value in the Value column. Use page 1 of the IMMD Worksheet, as shown below.																			
	<table><tr><th>Driver Question</th><th>Answer</th><th></th></tr><tr><td></td><td><table><tr><th>No</th><th>Likely No</th><th>Equally Likely Yes or No</th><th>Likely Yes</th><th>Yes</th></tr><tr><td> ----- ----- ----- ----- </td><td></td><td></td><td></td><td></td></tr></table></td><td>Value</td></tr><tr><td>1. Are the IMC's goals realistic and well-articulated?</td><td> ----- ----- -----X----- </td><td><u>7.5</u></td></tr></table>	Driver Question	Answer			<table><tr><th>No</th><th>Likely No</th><th>Equally Likely Yes or No</th><th>Likely Yes</th><th>Yes</th></tr><tr><td> ----- ----- ----- ----- </td><td></td><td></td><td></td><td></td></tr></table>	No	Likely No	Equally Likely Yes or No	Likely Yes	Yes	----- ----- ----- -----					Value	1. Are the IMC's goals realistic and well-articulated?	----- ----- -----X-----	<u>7.5</u>
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No	Likely No	Equally Likely Yes or No	Likely Yes	Yes																
----- ----- ----- -----																				
1. Are the IMC's goals realistic and well-articulated?	----- ----- -----X-----	<u>7.5</u>																		

IMMD Worksheet Instructions (cont.)

During Activity A5 Establish the IMC Success Profile

IMC CURRENT POTENTIAL FOR SUCCESS

The values of the drivers are added together to produce a total value representing the IMC's current potential for success.

Step	Action					
11	Add the values for all ten drivers to produce a total value. This is an estimation of the current potential for success of this IMC. Compare the total value to the categories shown below. This simple formula uses a basic value of 10 points for each of 10 drivers, with a possible maximum aggregate value of 100. Total Points = SUM (I1:I10) = CPS In the equation above, CPS is the current potential for success, and I1:I10 are the values for drivers 1 through 10. The percentages below are the criteria used to assign a current potential for success based on the total number of points.					
	Potential for Success	Critical	Poor	Borderline	Good	Excellent
	Aggregate Value	0-14	15-34	35-64	65-84	85-100
Step	Action					
12	Record the score. Write this score in the lower right corner of page 1 of the IMMD Worksheet, as shown below:					
	IMC Current Potential for Success is <u>GOOD</u> Total Value: <u>70</u>					
Step	Action					
13	Record the score. Also circle the score range on page 2 of the IMMD Worksheet, as shown below:					
	Current Potential for Success	Minimal	Poor	Borderline	Good	Excellent
	Value	0-14	15-34	35-64	65-84	85-100
	Current Potential for Success	Minimal	Poor	Borderline	Good	Excellent

IMMD Worksheet Instructions (cont.)

During Activity A5 Establish the IMC Success Profile (cont.)

IMC SUCCESS DIFFERENTIAL

This activity compares the IMC current potential for success to a success threshold to identify the success differential: the gap between the IMC's current potential for success and the desired potential for success (success threshold). The success threshold must be determined first.

Step	Action		
14	Review all relevant data. This is any information collected from stakeholders and managers about the success criteria for this IMC.		
15	Determine a success threshold for this IMC. Use the definitions below for the success threshold measures (which are the same as for the potential for success, as you are determining the <i>desired</i> potential for success for the IMC). A reasonable starting point might be between Borderline and Good. Then, adjust the threshold up or down depending upon the stakeholders' and managers' tolerance for risk or need for success. For example, if the environment and external changes are known to be highly volatile and the IMC is very new, a lower threshold for success may be acceptable at this time. On the other hand, an extremely mature, well-funded IMC may set a very high success threshold. It is unlikely that anyone would set a success threshold at Poor or Minimal.		
	Total Points	Success Threshold	Description
	85-100	Excellent	The strength of the mission's success drivers is very high. This is an indication that the mission's outcome is expected to be a success.
	65-84	Good	The strength of the mission's success drivers is high. This is an indication that the mission's outcome is more likely to be a success than a failure.
	35-64	Borderline	The strength of the mission's success drivers is moderate. This is an indication that the mission's outcome is equally likely to be a success or a failure.
	15-34	Poor	The strength of the mission's success drivers is low. This is an indication that the mission's outcome is more likely to be a failure than a success.
	0-14	Minimal	The strength of the mission's success drivers is very low. This is an indication that the mission's outcome is expected to be a failure.

IMMD Worksheet Instructions (cont.)

During Activity A5 *Establish the IMC Success Profile (cont.)*

Step	Action				
16	Mark the selected success threshold. Use page 2 of the IMMD Worksheet, as shown in this example for a success threshold set between Excellent and Good (only an Excellent potential for success would be acceptable in this case.				
	Current Potential for Success	Minimal	Poor	Borderline	Good
	Total Value	0-14	15-34	35-64	65-84
	Success Threshold	Minimal	Poor	Borderline	Good

IMMD Worksheet (page 1)						
Driver Question	Answer					
	No	Likely No	Equally Likely Yes or No	Likely Yes	Yes	Value
1. Are the IMC's goals realistic and well-articulated?	----- ----- ----- -----					_____
2. Are communications and information sharing about mission activities effective?	----- ----- ----- -----					_____
3. Are customer requirements and needs well understood?	----- ----- ----- -----					_____
4. Are organizational and political conditions facilitating completion of IMC activities?	----- ----- ----- -----					_____
5. Does the operational process support efficient and effective execution?	----- ----- ----- -----					_____
6. Does IMC management facilitate execution of tasks and activities?	----- ----- ----- -----					_____
7. Is task execution efficient and effective?	----- ----- ----- -----					_____
8. Are staffing and funding sufficient to execute all mission activities?	----- ----- ----- -----					_____
9. Are the technological and physical infrastructures adequate to support all mission activities?	----- ----- ----- -----					_____
10. Are changing circumstances and unpredictable events effectively managed?	----- ----- ----- -----					_____
IMC Current Potential for Success is _____					Total Value: _____	

IMMD Worksheet: Potential for Success and Success Threshold (page 2)					
Current Potential for Success	Critical	Poor	Borderline	Good	Excellent
Total Value	0-14	15-34	35-64	65-84	85-100
Success Threshold	Critical	Poor	Borderline	Good	Excellent

IMMD Worksheet: Driver Details (page 3)

Driver Question	Answer				
	No	More likely no than yes	Equally likely yes or no	More likely yes than no	Yes
1. Are the IMC's goals realistic and well-articulated?	-----	-----	-----	-----	-----
Rationale					
Value (+, 0, -, ?)					
Data Item					

Driver Question	Answer				
	No	More likely no than yes	Equally likely yes or no	More likely yes than no	Yes
2. Are communications and information sharing about mission activities effective?	-----	-----	-----	-----	-----
Rationale					
Value (+, 0, -, ?)					
Data Item					

IMMD Worksheet: Driver Details (page 4)

Driver Question		Answer				
		No	More likely no than yes	Equally likely yes or no	More likely yes than no	Yes
3.	Are customer requirements and needs well understood?		-----	-----	-----	-----
	Rationale					
	Value (+, 0, -, ?)		Data Item			
Driver Question		Answer				
		No	More likely no than yes	Equally likely yes or no	More likely yes than no	Yes
4.	Are organizational and political conditions facilitating completion of IMC activities?		-----	-----	-----	-----
	Rationale					
	Value (+, 0, -, ?)		Data Item			

IMMD Worksheet: Driver Details (page 5)

	Driver Question	No	More likely no than yes	Equally likely yes or no	More likely yes than no	Yes
5.	Does the operational process support efficient and effective execution?	-----	-----	-----	-----	-----
	Rationale					
	Value (+, 0, -, ?) Data Item					
	Driver Question	No	More likely no than yes	Equally likely yes or no	More likely yes than no	Yes
6.	Does IMC management facilitate execution of tasks and activities?	-----	-----	-----	-----	-----
	Rationale					
	Value (+, 0, -, ?) Data Item					

IMMD Worksheet: Driver Details (page 6)

Driver Question		Answer				
		No	More likely no than yes	Equally likely yes or no	More likely yes than no	Yes
7.	Is task execution efficient and effective?	----- ----- ----- -----				
Rationale						
Value (+, 0, -, ?)		Data Item				

Driver Question		Answer				
		No	More likely no than yes	Equally likely yes or no	More likely yes than no	Yes
8.	Are staffing and funding sufficient to execute all IMC activities?	----- ----- ----- -----				
Rationale						
Value (+, 0, -, ?)		Data Item				

IMMD Worksheet: Driver Details (page 7)

	Driver Question		Answer			
		No	More likely no than yes	Equally likely yes or no	More likely yes than no	Yes
9.	Are the technological and physical infrastructure support adequate to support all IMC activities?		-----	-----	-----	-----
	Rationale					
	Value (+, 0, -, ?)			Data Item		

	Driver Question		Answer			
		No	More likely no than yes	Equally likely yes or no	More likely yes than no	Yes
10	Are changing circumstances and unpredictable events effectively managed?		-----	-----	-----	-----
	Rationale					
	Value (+, 0, -, ?)			Data Item		

A7: IMC Improvements Worksheet

PURPOSE

This worksheet is an aid to documenting any recommended next steps or improvements for the IMC.

GUIDANCE

The analysis team members should use the knowledge gained about the IMC from the IMMD method (the IMC's strengths, weaknesses, and the improvement ideas from the activity *A1 Gather data from people*) as well as their own expertise and experience. The drivers that have a low value are a starting point for making improvements. The IMC managers and stakeholders will have the final decision-making authority for selecting next steps and improvements based on the analysis team's recommendations and their own knowledge about the IMC, the organization, and any current constraints.

WHY USE CATEGORIES FOR IMPROVEMENTS?

In general, people are able to deal with about seven to ten ideas when considering improvements. A mature IMC with few weaknesses will have a short list of improvement recommendations, and categories may not be needed. However, when the list of possible improvements exceeds ten, then using categories to group similarly themed improvements is a good idea. The categories can follow the analysis team's preferred structure or can emerge organically from the list of possibilities.

IMMD Improvements Worksheet Directions

Step	Action
1	Review all of the relevant information. This includes the IMMD Worksheet and the possible improvements identified by participants during the activity <i>Gather data from people</i> . Pay particular attention to any drivers with low values and common failure drivers that occur in multiple drivers.
2	Brainstorm ideas for improvements. Use any brainstorming technique. Include the ideas provided by participants from the activity <i>Gather data from people</i> .
3	Sort and categorize the improvement ideas into related categories. Use a technique such as affinity grouping. Revise and reword the improvements to eliminate duplicates, combine like ideas, and enhance clarity and readability. Eliminate any ideas that are deemed unacceptable. One possible starting set of categories is as follows: • Strategic issues • Incident management work processes • Authority and responsibility • Staffing and resources • Training for IMC personnel • Policies and procedures • Infrastructure • Quality assurance and quality improvement • Constituency training and awareness • Security risk management
4	Determine any priorities or dependencies among recommended improvements. These can be used to order the categories. Other dependencies (such as “increase the budget before purchasing additional infrastructure and training”) can be noted on the worksheet.
5	Review and revise the final categories and recommendations. Note that there can be several iterations of grouping and regrouping to determine a final set.
6	Document the final set of categories and recommendations on the IMC Improvement Worksheet. Add or delete categories as needed on the worksheet.

IMC Improvement Worksheet	
1.	Categories of improvements
2.	Dependencies or priorities among categories or specific improvement recommendations
3.	Category _____
Specific Improvement Recommendations:	
4.	Category _____
Specific Improvement Recommendations:	

IMC Improvement Worksheet	
5.	Category _____ Specific Improvement Recommendations:
6.	Category _____ Specific Improvement Recommendations:
7.	Category _____ Specific Improvement Recommendations:

IMC Improvement Worksheet	
8.	Category _____
Specific Improvement Recommendations:	
9.	Category _____
Specific Improvement Recommendations:	
10.	Category _____
Specific Improvement Recommendations:	

Appendix B IMMD in Adjunct Mode

STAND-ALONE VS. ADJUNCT MODE

The IMMD can be used alone (stand-alone mode) or in conjunction with another, more complex evaluation (adjunct mode). In stand-alone mode, the purpose is to estimate the current IMC potential for success and identify improvements. In adjunct mode, the IMMD adds a risk- or success-oriented view to a non-risk-oriented, larger, more complex evaluation. For example, the *Incident Management Capability Metrics* [Dorofee 2007] are used to evaluate the presence and quality of a full range of IMC functions but do not consider any risk or potential for success viewpoint for the IMC. The IMMD can provide that by adding it to the metrics evaluation activities.

Depending upon the way in which the IMMD is used, some of the IMMD activities described in this document may be optional or altered in execution.

GUIDANCE FOR DIFFERENT MODES

Some of the activities described in the body of this document are not performed, or are altered, when the IMMD is performed in adjunct mode. For example, interaction with the customer to present the results is a critical activity of the IMMD. In adjunct mode, the larger evaluation includes this activity and the IMMD is simply providing additional information that can be used to interpret the results and refine the recommendations for improvements and next steps. The IMMD is essentially providing an additional, risk- or success-related view of the larger evaluation's results. For a specific example, it was mentioned earlier that the IMMD can be used as an adjunct to the Incident Management Metric Evaluation. The metrics evaluation determines if all of the appropriate incident management functions are present and being effectively performed, but it provides no information on risk or the potential for success for the organization. Adding the IMMD in adjunct mode provides that additional view.

The following table depicts the differences between these modes of method execution.

Activity	Adjunct Mode	Notes
Phase 1 – Prepare for the IMMD		
PRA1 Develop stakeholder sponsorship	Not performed; stakeholder sponsorship is set by the other evaluation method	
PRA2 Set the IMMD scope	Not performed; limits are set by the other evaluation method	A method such as the IMC Metrics Evaluation Method has a very similar scope-setting process. Normally the IMMD will simply “inherit” the scope set for the larger evaluation method. If the scope of the other method is considerably different than required for the IMMD, then additional actions to clarify the scope may be necessary.
PRA3 Develop the IMMD plan	Performed in conjunction with team preparation for other evaluation method	
PRA4 Coordinate logistics	Not performed; logistics are set by the other evaluation method	
PRA5 Train personnel	Performed in conjunction with team preparation for other evaluation method	
PRA6 Tailor IMMD procedures, criteria, and supporting artifacts	Performed in conjunction with team preparation for other evaluation method	
Phase 2 – Conduct the IMMD		
A1 Gather data from people	Uses <i>Abbreviated IMMD Questionnaire</i> included in this appendix	In general, other evaluations use long interview sessions to gather information from participants. It is usually not effective to add a lot of time to such a session to use the full IMMD questionnaire. In addition, a lot of information that will be useful to the IMMD is also gathered by the other evaluation. Thus a shorter questionnaire is used and added to the end of the longer interview used by the other evaluation method. Five to ten minutes is frequently sufficient for the abbreviated form.
A2 Gather data from documentation	May use checklists from other evaluation method	The larger evaluation will generally include an extensive document and artifact review. Notes from that review can be filtered to acquire data items for the drivers.
A3 Evaluate drivers	Likely includes a review of relevant data captured in the other evaluation method	All information gathered by the larger evaluation as well as the <i>Abbreviated IMMD Questionnaire</i> can be reviewed for data items relevant to the drivers.

Activity	Adjunct Mode	Notes
A4 Apply analysis algorithm	Performed as documented	
A5 Establish the IMC success profile	Performed as documented	
A6 Determine next steps	Performed as documented	
Phase 3 – Complete the Post IMMD Activities		
PAA1 Communicate results	Not performed; IMMD results are included with the other evaluation method results	
PAA2 Conduct Postmortem of the IMMD	Accomplished in conjunction with postmortem of other evaluation method	
PAA# Implement improvements to the IMMD process	Performed in conjunction with improvements to other evaluation method	

ABBREVIATED IMMD QUESTIONNAIRE

An abbreviated questionnaire is used in adjunct mode at the end of any interviews associated with the larger evaluation to gather risk-related information for the IMMD. This worksheet is provided next in this section.

Abbreviated IMMD Questionnaire

PURPOSE

The abbreviated version of the IMMD Questionnaire is used when the IMMD is being performed in adjunct mode; that is, used as an additional part of a much larger, more complex evaluation, such as the evaluation for the Incident Management Capability Metrics [Dorofee 2007]. In such a larger evaluation, long interviews are conducted with IMC personnel to gain information relative to the IMC for later analysis. This abbreviated questionnaire is used at the end of such an interview to gain additional insight into the success and failure drivers for the IMC. This questionnaire can be applied in as little as 5-10 minutes.

GUIDANCE

As this questionnaire is applied at the end of a longer interview, the analysis team should be sure not to cause any unnecessary repetition in answers or discussion. This questionnaire is primarily intended to gather any remaining information relative to the drivers.

DIRECTIONS FOR ANALYSIS TEAM

Hand out or display the Abbreviated IMMD Questionnaire. The interviewer should guide this activity. The note-taker should capture all data identified by the participants. Note that the opening and closing of this interview is part of the larger interview session, as there may be specific instructions associated with that larger evaluation method.

Step	Action
1	Explain to the participants that this is a new part of the interview. Explain that you are looking for risk and success-related information to supplement the other evaluation information and that you need their honest, open answers to a short series of questions.
2	Ask the participants Question 1. Give them time to answer before verbally prompting them. Be sure to get answers from all participants.
3	Discuss their answers. After participants discuss their initial concerns, use the summary of IMC drivers to guide further discussion. Be sure to get the rationale for their answers.
4	Ask the participants Question 2. Give them time to answer before verbally prompting them. Be sure to get answers from all participants.
5	Ask the participants Question 3. This is a final chance for them to bring up any concerns. If they do not have any further concerns, move on to Question 4. Be sure to get answers from all participants.

Step	Action
6	Ask the participants Question 4: Each participant should identify one improvement. At this point, the process reverts to the next step in the larger evaluation interview process.

Abbreviated IMMD Questionnaire (page 1)	
1.	What issues could prevent you from successfully achieving your mission and objectives? Consider the following: - Goals - Communication and information sharing - Customer requirements - Organizational and political conditions - Operational process design - IMC management facilitation - Task execution - Staffing and funding - Technological and infrastructure support - Events and changing circumstances
2.	What factors are helping you successfully meet the IMC's mission and objectives?
3.	Are there any other issues or concerns that could affect successfully achievement of the IMC's mission and objectives?
4.	If you could improve one thing, what would it be?

Appendix C IMMD Activities and Data Types

ACTIVITIES

The following table describes the key activities for the IMMD and the supporting worksheets involved in those activities. Note that all worksheets are included in Appendix A along with instructions.

Activity	Activity Description	Worksheets
Phase 1 – Prepare for the IMMD		
PRA1 Develop stakeholder sponsorship	Meet with key stakeholders and decision makers to foster their active and visible support of the IMMD.	IMMD Preparation Checklist
PRA2 Set the IMMD scope	Determine the boundaries of the IMMD based on requirements and constraints (schedule, funding, logistics, contractual restrictions).	IMMD Preparation Checklist IMMD Scope List
PRA3 Develop the IMMD plan	Create a plan for conducting the IMMD based on its scope as well as requirements and constraints (schedule, funding, etc.).	IMMD Preparation Checklist IMMD Scope List
PRA4 Coordinate logistics	Reserve rooms for meetings, make sure that any required equipment (e.g., overhead projectors, flip charts) is available, and inform people when meetings will be held.	IMMD Preparation Checklist IMMD Scope List
PRA5 Train personnel	Ensure that people who will perform the IMMD are able to effectively conduct all IMMD activities.	All
PRA6 Tailor IMMD procedures, criteria, and supporting artifacts	Adapt all IMMD procedures, criteria, and supporting artifacts (e.g., worksheets, templates, tools) for the circumstances and contexts in which those procedures will be used.	All
Phase 2 – Conduct the IMMD		
A1 Gather data from people	Elicit information about an IMC from people who play a role in executing IMC activities, and transform the information into usable data.	IMMD Questionnaire IMMD Handout
A2 Gather data from documentation	Collect and review documentation about the IMC, such as concept of operations, policies, procedures, or reports, and generate usable data from that documentation.	IMMD Document Checklist
A3 Evaluate drivers	Evaluate individual drivers against a set of defined criteria to determine the drivers' effects on the IMC's mission outcome.	IMMD Worksheet

Activity	Activity Description	Worksheets
A4 Apply analysis algorithm	Follow the selected analysis algorithm to estimate the current potential for success.	IMMD Worksheet
A5 Establish the IMC success profile	Generate a success profile for the IMMD by - setting the success threshold - comparing the IMC's current potential for success to the success threshold - deciding whether or not the current IMC potential for success is acceptable	IMMD Worksheet
A6 Determine next steps	Identify actions for maintaining or improving the IMC's current potential for success.	IMC Improvement Worksheet
Phase 3 – Complete the Post-IMMD Activities		
PAA1 Communicate results	Convey the results of the IMMD to key stakeholders.	IMMD Handout IMMD Worksheet IMC Improvement Worksheet
PAA2 Conduct postmortem of the IMMD	Conduct one or more meetings to - review the execution of the IMMD - identify strengths and weaknesses of the IMMD - document modifications and improvements to the IMMD process	IMC Improvement Worksheet
PAA3 Implement improvements to the IMMD process	Make changes, based on lessons learned, to the IMMD process, including updating procedures, worksheets, artifacts, tools, and training as appropriate.	IMC Improvement Worksheet

INPUTS²⁰

The following table contains the key inputs required by the IMMD.

Type	Description
PRI1 IMMD requirements	The goals of the IMMD, needs of the stakeholders, and a basic description of the IMC being analyzed
I1 People's knowledge	People's individual and collective perspectives, information, and opinions about incident management (e.g., their activities and work products) and the IMC's potential for success
I2 Documentation	Documentation that is relevant to the IMC. Examples include IMC mission statement, concept of operations, policies, procedures, process workflow, work products, and quality assurance data.

²⁰ Inputs to many phases and activities also include outputs from prior activities, not explicitly listed here.

Type	Description
PAI1 IMMD results and plans	All outputs produced by the IMMD, including findings and IMMD data, as well as plans, budget, and schedule for conducting the IMMD
PAI2 IMMD procedures, artifacts, tools, and training	Supporting materials used to conduct an IMMD, including procedures, worksheets, databases, and training artifacts

CONSTRAINTS

The following table contains the key constraints on the IMMD.

Note that Phase 1 outputs PRO1, PRO2, PRO3, and PRO 4 become constraints in Phase 2 as they set the context for all subsequent IMMD activities. If Phase 1 outputs PRO5, PRO6, and PRO7 are deficient or lacking, then they too will become constraints in Phase 2 instead of becoming resources that support the execution of the IMMD.

Type	Description
C1 IMMD constraints	Any circumstances that could affect the execution of the IMMD, including logistics, personnel, schedule, and cost issues
PRO1 Stakeholder sponsorship	Active and visible support of the IMMD by key stakeholders and decision makers
PRO2 IMMD scope	The boundaries of the IMMD, including - each key objective for the IMC's mission - all activities needed to achieve the IMC's mission selected for the IMMD - the people who have ultimate responsibility for completing or overseeing each IMC activity Stakeholder input on IMC success criteria
PRO3 IMMD plan	The approach for conducting the IMMD, including key activities, resources, schedule, and funding, as well as the requirements for communicating results to key stakeholders after the IMMD is complete
PRO4 IMMD logistics	The facilities and equipment needed to conduct the IMMD as well as communications about meeting times and locations

RESOURCES

The following resources support execution of the activities performed during the IMMD.

Note that if Phase 1 outputs PRO5, PRO6, and PRO7 are deficient or lacking, then instead of becoming resources in Phase 2, they will become constraints.

Type	Description
R1 IMMD ²¹	The basic approach, or framework, for conducting an IMMD
R2 IMMD preparation procedures	Documentation that describes how to prepare for an IMMD
R3 IMMD preparation artifacts and tools	Worksheets, automated tools, and databases needed to prepare for an IMMD
R4 IMMD training artifacts	Documentation and other materials used to train people how to conduct an IMMD
R5 Experienced personnel	People who are experienced in all phases of an IMMD
R6 Post-IMMD procedures	Documentation that describes how to conduct post-IMMD activities
R7 Post-IMMD artifacts and tools	Templates, worksheets, standard presentations, automated tools, and databases needed to conduct post-IMMD activities
PRO5 Trained personnel	The people who are tasked with performing the IMMD and are prepared to conduct it
PRO6 IMMD procedures	Documentation that describes how to conduct IMMD activities
PRO7 IMMD artifacts and tools	Worksheets, automated tools, and databases needed to perform IMMD activities

OUTPUTS

The following are the outputs produced by the IMMD.

Outputs PRO1, PRO2, PRO3, and PRO4 become *constraints* to the IMMD as they set the context for all subsequent IMMD activities. Outputs PRO5, PRO6, and PRO7 become *resources* to the IMMD as they support the execution of the IMMD.

Outputs N1, N2, O1, O2, O3, and O4 become *inputs* to subsequent activities.

Type	Description
PRO1 Stakeholder sponsorship	Active and visible support of the IMMD by key stakeholders and decision makers

²¹ Note that the IMMD Method presented here includes the framework, preparation procedures, and some worksheets that can be used for resources R1, R2, and R3, which can then in turn be tailored to produce output resources PRO6 and PRO7.

Type	Description
PRO2 IMMD scope	The boundaries of the IMMD, including • each key objective for the IMC's mission • activities needed to achieve the IMC's mission selected for the IMMD • selected people who have ultimate responsibility for completing or overseeing each selected activity Stakeholder input on IMC success criteria
PRO3 IMMD plan	The approach for conducting the IMMD, including key activities, resources, schedule, and funding, as well as the requirements for communicating results to key stakeholders after the IMMD is complete
PRO4 IMMD logistics	The facilities and equipment needed to conduct the IMMD as well as communications about meeting times and locations
PRO5 Trained personnel	The people who are tasked with performing the IMMD and are prepared to conduct it
PRO6 IMMD procedures	Documentation that describes how to conduct IMMD activities
PRO7 IMMD artifacts and tools	Worksheets, automated tools, and databases needed to perform IMMD activities
N1 Data from people	Usable data about an IMC based on individual and group perspectives, information, and opinions about the IMC and its potential for success • Strengths – conditions, circumstances, and events that drive an IMC toward a successful outcome • Issues – conditions, circumstances, and events that drive an IMC toward an unsuccessful outcome • Improvements – suggestions for improvements to drive an IMC toward a successful outcome
N2 Data from documentation	Usable data about the IMC that is distilled from documentation, such as a concept of operations, policies, procedures, work products, and quality assurance data • Strengths – conditions, circumstances, and events that drive an IMC toward a successful outcome • Issues – conditions, circumstances, and events that drive an IMC toward an unsuccessful outcome
O1 Driver values and rationale	The current status of each driver, based on the data from people and documentation, which includes • the driver value • rationale that explains why that value was selected
O2 IMC current potential for success	A qualitative measure of the current probability, or likelihood, that the desired outcome will be achieved or exceeded

Type	Description
O3 IMC success profile	Status of the current IMC's chances for success, including • measure of the current IMC potential for success • identification of the IMC success threshold • analysis of the IMC success differential
O4 IMC next steps	Actions that need to be implemented by the customer organization to maintain or improve the IMC mission's current potential for success
PAO1 Communicated IMMD results	IMMD results that have been conveyed to key stakeholders, including • driver values and rationale • IMC success profile • IMC next steps • supporting data as appropriate
PAO2 Lessons learned	Knowledge gained by conducting an IMMD that can be used to modify and improve future IMMD evaluations
PAO3 Updates to IMMD procedures, artifacts, tools, and training	Any changes, based on lessons learned, to the IMMD procedures, artifacts, tools, and training intended to improve the efficiency and effectiveness of future IMMD evaluations

Appendix D Mission Diagnostic Protocol Data Cross-Reference

DATA ITEMS AND ACTIVITIES IN THE MDP

The IMMD is derived from the *Mission Diagnostic Protocol, Version 1.0*. Consistency with the MDP is measured by the correlation between data items in the IMMD activities and the data items of the more generic protocol activities. The following table provides a cross-reference between these activities and data items. Note that this appendix is of interest only to those wishing to verify consistency of the IMMD with its parent protocol, the MDP.

IMMD Activity	MDP Activity
PRA1 Develop stakeholder sponsorship	Develop stakeholder sponsorship
PRA2 Set the IMMD scope	Set the scope of the assessment
PRA3 Develop the IMMD plan	Develop the assessment plan
PRA4 Coordinate logistics	Coordinate logistics
PRA5 Train personnel	Train personnel
PRA6 Tailor IMMD procedures, criteria, and supporting artifacts	Tailor assessment procedures, criteria, and supporting artifacts
A1 Gather data from people	A1 Gather data from people
A2 Gather data from documentation	A2 Gather data from documentation
A3 Evaluate drivers	A3 Evaluate drivers
A4 Apply analysis algorithm	A4 Apply analysis algorithm
A5 Establish the IMC success profile	A5 Establish success profile
A6 Determine next steps	A6 Determine next steps
PAA1 Communicate results	Communicate results
PAA2 Conduct postmortem of the IMMD	Conduct postmortem of the MDP
PAA3 Implement improvements to the IMMD process	Implement improvements to the MDP assessment process

IMMD Data Item	MDP Data Item
C1 IMMD constraints	C1 Assessment constraints
I1 People's knowledge	I1 People's knowledge
I2 Documentation	I2 Documentation
N1 Data from people	N1 Data from people
N2 Data from documentation	N2 Data from documentation
O1 Driver values and rationale	O1 Driver values & rationale
O2 IMC current potential for success	O2 Current potential for success
O3 IMC success profile	O3 Success profile
O4 IMC next steps	O4 Next steps
PAI1 IMMD results and plans	PAI1 MDP assessment results & plans
PAI2 IMMD procedures, artifacts, tools, and training	PAI2 MDP assessment procedures, artifacts, tools, & training
PAO1 Communicated IMMD results	PAO1 Communicated assessment results
PAO2 Lessons learned	PAO2 Lessons learned
PAO3 Updates to IMMD procedures, artifacts, tools, and training	PAO3 Updates to MDP assessment procedures, artifacts, tools, & training
PRI1 IMMD requirements	PRI1 Assessment requirements
PRO1 Stakeholder sponsorship	PRO1 Stakeholder sponsorship
PRO2 IMMD scope	PRO2 Assessment scope
PRO3 IMMD plan	PRO3 Assessment plan
PRO4 IMMD logistics	PRO4 Assessment logistics
PRO5 Trained personnel	PRO5 Trained personnel
PRO6 IMMD procedures	PRO6 MDP assessment procedures
PRO7 IMMD artifacts and tools	PRO7 MDP assessment artifacts & tools
R1 IMMD	R1 Mission Diagnostic Protocol (MDP)
R2 IMMD preparation procedures	R2 MDP preparation procedures
R3 IMMD preparation artifacts and tools	R3 MDP preparation artifacts & tools
R4 IMMD training artifacts	R4 MDP assessment training artifacts
R5 Experienced personnel	R5 Experienced personnel
R6 Post-IMMD procedures	R6 Post-assessment procedures
R7 Post-IMMD artifacts and tools	R7 Post-assessment artifacts & tools

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13. ABSTRACT (MAXIMUM 200 WORDS) The Incident Management Mission Diagnostic (IMMD) is a risk-based approach for determining the potential for success of an organization's incident management capability (IMC). This potential for success is based on a finite set of current conditions – a limited set of key drivers used to estimate the current IMC health relative to a defined benchmark. Decision-makers can then determine if the current state of the IMC is acceptable, or if actions are required to improve the situation. The IMMD can be viewed as an efficient, first-pass screening of an IMC to diagnose any unusual circumstances that might affect its potential for success. This document can be read for understanding of the concepts and activities of this method, or to learn how to perform the IMMD. The method description includes full descriptions of all activities as well as a set of worksheets and instructions for executing the method.				
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