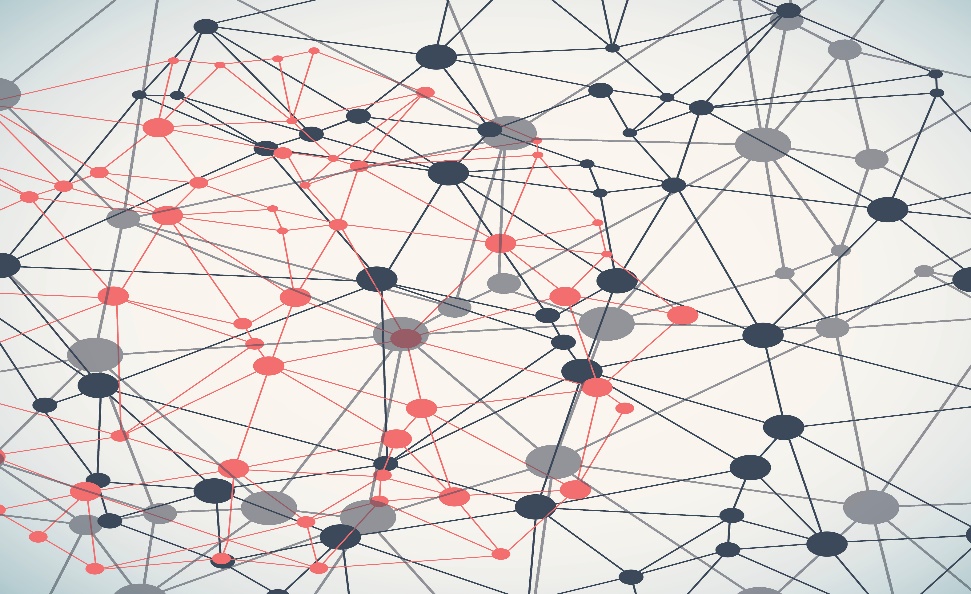
IVN SOP (Public Version)

Extracted February 7, 2024

Integrated Value Network (IVN)

Data Management and Reporting

Standard Operating Procedure (SOP)

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**Note: Feel free to enter any comments and questions as Word comments.**

**IVN Data Management and Reporting SOP**

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# Description and purpose of this document

Description: This SOP explains procedures to create, validate, edit, publish, and announce updated versions of an organization's IVN dataset.

Purpose: This SOP directs staff on operations to collect, update, analyze, report, and implement IVN data with minimum direction or supervision.

Document Changes and Modifications History

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# Introduction

## What is an IVN?

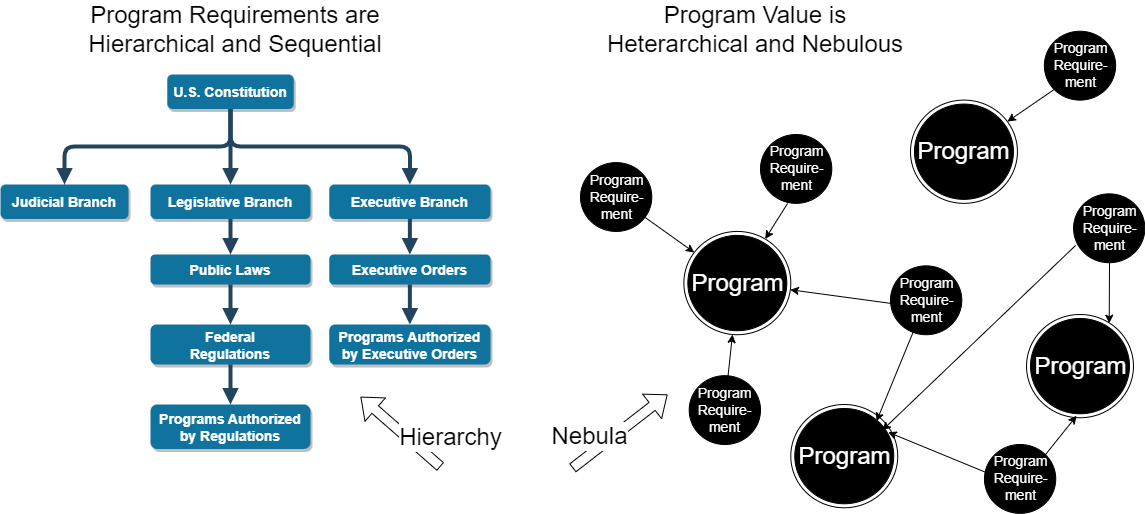
The Federal Government of the United States governs the Nation using an interdependent network of requirements, including laws, rules, agreements, goals, and metrics, that preserve, protect, and defend the Constitution of the United States and those under its authority. To represent Federal requirements as an interdependent network, we can identify source documents and their requirements as ***nodes*** in the network.



To observe how delivering requirements adds delivery value to other requirements, we can draw a ***connector*** with an arrow from a requirement that provides or “enables” value to another “dependent” requirement receiving value.



The Integrated Value Network (IVN) Initiative is an academic and industry project to represent public policy as an interdependent network of requirements. The dataset for this network is a searchable database of public policies and the documents they authorize, connected by how their requirements enable each other to progress toward their end state. Public policies in the IVN include Public Laws, the U.S. Code of Federal Regulations, program directives, Executive Orders and guidance, strategic plans, performance plans and reports, and other content that aligns to the requirements in these sources or derives its authority from them. Requirements in these sources include goals, regulations, program directions, Executive Branch compliance documents, strategic objectives, performance measures, and orders.



This approach to depict and understand public policy requirements as a network helps Federal agencies and other stakeholders understand and predict systematic causes and effects of policy decisions, maximize intended effects of policy change, and mitigate unintended consequences. Research and management of these policy interdependencies also directs continuous learning, improvement, allocation of resources, and adaptation of policymaking operations as defined in the Evidence-Based Policymaking Act of 2018.

Three branches of U.S. Federal Government - Executive, Legislative, and Judicial - have their own sets of responsibilities and powers connecting each other across networks of laws, rules, agreements, goals, and metrics.

This network of U.S. Government requirements also transacts delivery value with state and local governments, connected by their own requirements, such as procedures for applications for Federal grants.

The U.S. Government participates in a few international organizations and treaties, which are connected to the Federal Government through yet another network of requirements. These organizations and treaties regulating international trade, provide aid to developing nations, and promote peace and security.

As such, U.S. laws, rules, agreements, goals, and metrics can be understood as a network connected to several other networks. Understanding, communicating, and improving this network helps the U.S. Federal Government operate and improve for maximum effect. A networked understanding of U.S. Federal Government requirements clarifies how the Government works and how to improve it based on a comprehensive understanding of cause and effect. For Federal agencies and other stakeholders who transact business value across these networks, the IVN approach offers a powerful base of evidence for creating value and maximizing positive outcomes.

An IVN of Federal laws, strategies, regulations, directives, and performance measures provides a systemic map of they interact to deliver compliance. This map provides optics to manage these interactions strategically, to make policy decisions with constructed systemic effects.

## Strategic goals for the IVN Project

1. Establish a centralized database of U.S. Executive Branch policies, strategies, regulations, and performance measures. This database should be accessible to all relevant stakeholders and should include detailed information on each policy, strategy, regulation, and performance measure.
2. Develop a comprehensive framework for integrating the various elements of the U.S. Executive Branch policies, strategies, regulations, and performance measures. This framework should include a clear definition of the purpose of each element, as well as how they interact with one another.
3. Create a system for tracking and monitoring the implementation of the U.S. Executive Branch policies, strategies, regulations, and performance measures. This system should include a mechanism for collecting data on the effectiveness of each element, as well as a way to identify areas where improvement is necessary.
4. Develop a set of metrics for measuring the success of the U.S. Executive Branch policies, strategies, regulations, and performance measures. These metrics should be tailored to the specific goals of the U.S. Executive Branch and should be updated regularly to reflect changes in the environment.
5. Establish a feedback loop between the U.S. Executive Branch and stakeholders to ensure that the policies, strategies, regulations, and performance measures are meeting their intended objectives. This feedback loop should include regular meetings between stakeholders and the U.S. Executive Branch to discuss progress and identify areas for improvement.
6. Develop a system for evaluating the overall effectiveness of the U.S. Executive Branch policies, strategies, regulations, and performance measures. This system should include a comprehensive review of the data collected from the tracking and monitoring system, as well as an analysis of the feedback received from stakeholders.

## Who creates the governance sources indexed in an IVN?

Governance sources are created by executives, lawmakers, policymakers, regulatory bodies, strategic planners, performance researchers, and anyone who creates content to support delivery of the scope of these sources.

## Who uses the IVN and what goals does the IVN help them achieve?

Policymakers, planners, and analysts use the IVN as a basis of evidence for products that serve a variety of strategic goals.

1. Help responsible offices of policies, plans, measures, priorities, and portfolios identify and communicate their value to and within the Federal Governance Structure.
2. Change policies, plans, measures, and priorities to increase the value they provide.
3. Advocate for change to laws, policies, plans, measures, and priorities to increase the capability of the Federal Governance Structure to receive value.
4. Produce maps (networks) of initiatives, offices, programs, and outcomes that are logical and data-driven models of portfolios.
5. Convert unstructured data into structured decision-quality information that, in turn, becomes enterprise knowledge.

## What products do IVN users create based on IVN data?

People use the IVN data to make derivative products that serve as a basis of evidence for reporting and improving the delivery of value across the Federal Governance Structure.

The U.S. Department of Agriculture Office of Marketing and Regulatory Programs Business Services (MRPBS) used an IVN to show how strategic requirements, including policies, regulations, orders and priorities drive the work of MRPBS and the interdependencies across those requirements.

The Department of Veterans Affairs (VA) built a prototype data model to link its governance documents that deliver and receive business value to each other, like the President’s Management Agenda, the Strategic Plan, Agency Priority Goals, VA Secretary’s Priorities, Department policies, and performance measures. After VA started populating the model, the IVN team helped VA offices update their strategic communication documents using IVN data on the value linkages to and from their documents.

VA subsequently discovered that a set of laws (GPRA, Government Performance and Results Act Modernization Act (GPRAMA), Evidence Act) and OMB policies (A-11, A-123, M-19-23), when viewed together, generated a specific network of mandated documents with specific mandated linkages, mentioned in OMB A-123 as the Federal Governance Structure. This Structure became the network that defines what documents to add to the database and how to link them. We now refer to networks generated by the model as IVNs.

FAA developed and used a pilot IVN to support strategic communications and web project initiatives. The database is consulted to support corporate strategic communications efforts, e.g., communications campaigns, and website initiatives that support the communications to foster collaboration across office lines of business and to support meeting individual office business plans goals and performance measures.

GSA’s performance.gov team reviewed the IVN to inform how to enter, report and track performance measures. The IVN influenced the use of Touchpoints to support data entry of Agency Priority Goals (APGs) - <https://github.com/GSA/EDX/blob/main/processes/data-collections.md> - and link APGs through Agency Strategic Plans to metrics for traceability and to inform the design of their dashboard reporting system.

The Agency Chief Operating Officer (COO) and Program Management Improvement Officer (PMIO) are implementing a two-year IVN network development and maintenance plan based on the VA IVN design. The intent is to develop lateral networks in program and project management knowledge areas that are in critical need such as requirements, risk, and performance management for Agency initiatives and special emphasis programs.

The IVN provides a knowledge base to ask and answer questions related to the alignment of governance documents across organizations and sources.

The IVN shows how governance documents derive their authority from orders, regulation and law. This provides a visual basis of evidence for policymaking in accordance with the Foundations for Evidence-Based Policymaking Act of 2018 (Public Law No: 115-435).

The IVN depicts program organizations as a subnetwork of value that they provide to the overall organization and external stakeholders. This mapping of the “territory of value” clarifies how to communicate the value created by the organization, where to change the priorities in the enterprise to increase value, and how to restructure the organization mindful of the systemic effects of those changes.

## The Federal Governance Structure (FGS)

From OMB A-123, Management's Responsibility for Enterprise Risk Management and Internal Control: “Federal leaders and managers are responsible for…a governance structure defined through…sources, including laws…. Executive directives and Agency policies.”

The source documents that direct the governance of the U.S. Executive branch consist of a complex network of laws, regulations, goals, policies, and performance measures. They link to each other in various ways; sometimes as sets of governance that inform a particular program, sometimes as authorities to operate a program, and some relationships are linked by Executive Branch direction or Public Law.

Some of these mandated linkages include:

* President’s Management Agenda to APGs, Agency Performance Measures and Executive Orders
* Agency Strategic Plans to the President’s Management Agenda, Agency Performance Measures, the Agency Learning Agenda, Agency Risk Register, and the Agency’s Priority Goals
* Evidence Act Capacity Assessment to Agency’s Budget Submission and Learning Agenda
* Performance Measures to Agency Business Operations and APGs
* Agency Policies to U.S. Code and Responsible Offices

When these linkages are represented as a network, a structure emerges.



*Figure 1: The Federal Governance Structure (FGS)*

The Federal Governance Structure (FGS) is complex; representing it as a network helps us to understand its alignments in a useful, universal way. This indexing allows for comprehensive program and planning actions, with systemic, measurable effects.

This network is not a product, but rather it is a logical model that applies policy and law to basic set theory. Whether policymakers are aware of this network, or choose to acknowledge it, the alignments in this system affect the impact of Federal service, the risks that emerge, and the influence on and from external stakeholders. The vision of the IVN Project is that policymakers benefit from understanding this structure to build a common understanding of governance and coordinate action based on that understanding.

Another analogy is that the Federal Governance Structure functions like a "power grid" structure of strategic "powerplant" documents that provide governance value, and operational "substation" documents that receive value. Because the network emerged ad hoc, there are underserved substations, as well as substations drawing power from powerplants that get no credit for providing this power, because serving that neighborhood was not part the original intent of building that powerplant.

In conclusion, Federal agencies and other stakeholders can create and apply an IVN to navigate complex and interconnected policy challenges and create value for society through evidence-based policymaking and planning.

# Collect IVN data

The goal of the “collect data” step is to build the inventory of governance documents that supply and demand value for the initial network, the map, and the connections that link a governance document to the rest of the governance documents in the organization's network. This is accomplished through identification of the scope of the governance documents that inform the Agency's or organization's work and initiatives within the selected domain.

## Thumbs up sign outlineIVN Sources

Prioritize identification and collection of data (document) sources based on legal, mandatory, regulatory, legislative, or statutory requirements.

From OMB A-123, Management's Responsibility for Enterprise Risk Management and Internal Control: “Federal leaders and managers are responsible for…a governance structure defined through…sources, including laws…Executive directives and Agency policies.” Public Law and OMB guidance requires agencies to publish certain governance source documents and link those documents in specific ways. IVN documentation refers to these mandated documents and linkages as the "Federal Governance Structure" as per OMB A-11. These documents and mandated linkages include:

* Strategic Plan to Evidence Act Learning Agenda, President’s Management Agenda, Risk Register, APGs and OPM Performance Measures
* President’s Management Agenda to APGs, OPM Performance Measures and Executive Orders
* Evidence Act Capacity Assessment to OMB Budget Submission and Learning Agenda
* Performance Measures to Agency Business Operations and APGs
* Prioritize these linkages when you build your priority queue of what source documents to include and link in your IVN dataset.

Another priority to consider would a drafts or outline of a high visibility strategic or program document that would benefit from a systemic map of how the requirements in the document provide and receive mission value.

The source or governance documents are decomposed into individually deliverable "components." Analysts map these components by viewing two governance documents at a time and finding and documenting the connections where a component of one document adds business value to a component of the other document. Source documents and their components that add business value are called enabling sources, and documents and their components that receive business value are called dependent sources and components. Source documents may not have clearly defined components, or their components may have too large a scope (or too small a scope) to map to dependent sources. In those cases, identifying the correct (feasible) scope of the documents and their components may require additional analysis.

In many cases, the table of contents of enabling sources will identify the first few layers of the components that will need to be analyzed and entered; however, there will sometimes be a need to subordinate a level in the table of contents with an additional layer of separation to make the mapping of dependent components more effective. An individual numbering system may need to be developed to apply a more consistent approach to this layering. In that situation add an additional layer of subordination (numbering) to the section with too great a scope. (For example, Section 1.1 could be decomposed into subordinate components such as 1.1.1, 1.1.2, 1.1.3, and 1.1.4.)

When considering the scope or granularity of sources, consider setting components to the scope that is feasibly adaptable by the governing organization of that source. In other words, do not create components that are too large for the responsible organization to change or too small for the Agency to meaningfully change. Right size the components to take advantage of economies of scale and feasibility.

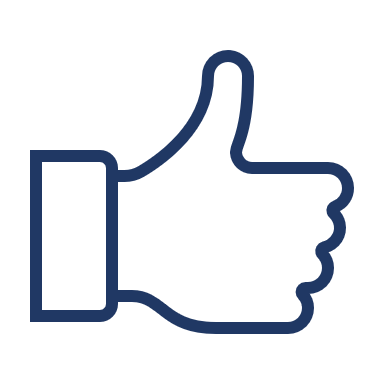
At this point, the IVN Project team can separate the governance documents into individually deliverable components.

Collecting the data also supports (the other half of the) identification of the scope of the governance documents that will be networked and mapped.

Even though the data relationships are expressed as a non-linear network, the connections are made explicitly in a linear fashion by evaluating component pairs across an enabling – dependent source at a time. Then this evaluation is done until all the relationships within that enabling – dependent source pair have been exhausted. The point is that the web of connections across many pairs of source documents, which ultimately grows geometrically into the network, is founded on a series of linear evaluations.

## Typical IVN data sources

* United States Code (USC) / Public Laws
  + Use references in Agency policies to USC to link policies to USC sections in the IVN
* Code of Federal Regulations
  + Use references in Agency policies to Code of Federal Regulations (CFR) to link policies to CFR sections in the IVN. Also link these CFR sections to the U.S. Code that authorizes the CFR sections.
* OMB Information and Guidance[[1]](#footnote-2)
* Executive Office of the President
  + President’s Management Agenda (PMA)
  + PMA Learning Agenda
  + APGs
* Agency directives
  + Division / bureau directives
* Agency policies
  + Division / bureau policies
* Agency strategic plans
  + Strategic goals
  + Strategic objectives
  + Performance goals / metrics
* Agency portfolios, programs, projects, and products
  + Programmatic data (budgets and schedules, for example) (which have their own types of integrated data through portfolios and programs)
  + Outcomes
* Agency risks
  + Publicly available content or derived content from Agency Risk Registers

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IVN practitioners recommend starting with the Agency's or organization's strategic plan and map the strategic plan to the PMA. The strategic plan generally has the most discernible and explicit linkages across the greatest number of other documents.

IVN practitioners also recommend mapping the newest directives first, which allows for accommodating the most recent changes in U.S. Code and Public Laws.

# Enabling sources and dependent sources

IVN analysts join source documents via pairs of connections between a component of a source that adds, or "enables" value, and a component of another source that receives, or "depends on" that value, like "supply and demand" models used in economics and marketing.

The network of sources and value connections across components is how IVNs represent the Federal Governance Network.

## What are common enabling source features

Because enabling sources have components that add value to, or "enable" dependent components of dependent sources, enabling sources tend to be subordinate to the authority that owns the dependent source. For example, directives that cite U.S. Code regulations are enabling sources of those regulations, and performance measures are enabling sources of the strategic objectives they measure.

Enabling sources are often products of the authority requesting analysis products based on IVN data. This is because all three goals of the IVN (report value to the enterprise, improve value added to the enterprise, increase the capability of the enterprise to receive value) can be achieved when an IVN analysis product focuses on one enabling source. For example, an IVN analysis product that shows alignment from a strategic plan as an enabling source can report how this source adds value to specific components of multiple stakeholders, recommend how to increase this value mindful of these alignments, and recommend how to solicit these stakeholders to change their policies, plans, etc., to receive more value.

## What are common dependent source features

Because dependent sources have components that demand value from, or "depend" on enabling components of enabling sources, dependent sources tend to be superordinate to the authority that owns the enabling source.

For example, the PMA is a dependent source, because it "depends" on Agency programs and plans that supply value to "enable" the enterprise to advance toward the end state of one of the components in the PMA.

Dependent sources also are more likely to update on an established schedule, such as strategic plans and annual reports.

# Enabling source and dependent source components

Governance documents add business value to each other because the deliverables in a document contribute to deliverables in other documents. To identify the ways that deliverables across governance documents enable and depend on each other to succeed, we link source documents by linking subordinate components across multiple documents.

## How to identify source document components

To identify the components of a source, start with that source document's table of contents. The authors of that source built the table of contents based on their professional understanding of the content, its relevance, and sequence.

Many source documents will have a table of contents, which you can use to identify components. For example, a source document's table of contents might consist of the sections below.

2029 Agency X Strategic Plan

1 Introduction

2 Healthcare

2.1 Hospital Care

2.2 Prescription Benefits

3 Compensation

3.1 Pension

3.2 Grants

As introductions do not tend to have unique business scope, it is appropriate to avoid considering Section 1 to be a component. That leaves six potential components in the table of contents.

Section 2 is its own component. If a section has its own unique description, use that description for its component description field. Otherwise use the titles of its subordinate components (2.1, 2.2) as its description.

It may be possible to deliver the scope of Section 2 without delivering any of the scope in subcomponents 2.1 or 2.2. In this case, components of another document could link to Section 2 and not link to 2.1 or 2.2. To account for this possibility, we identify Section 2 as a unique component.

When naming components in the dataset, try to include an abbreviated name for the source of the component starting with the originating organization, e.g., "Agency X SP 2029 2.1: Hospital Care" for component 2.1.

## How to separate or combine components for maximizing linkages

Sometimes components will be too large or too small in scope to map effectively in the network. For example, a component could be so large that the enterprise could deliver it in such a way that does not necessarily deliver on the dependent component of the other source, or a component could be so small that the enterprise could deliver it and have no measurable effect on the dependent source. So sometimes you will have to create an additional level of separation for the components than you see in a table of contents. Use a separate alphanumeric system to create this additional level, e.g., separate 2.3.2 into 2.3.2.a, 2.3.2.b, etc. Separate 3.2.a into 3.2.a.1, 3.2.a.2, etc.

Theoretically, it is possible that you may need to combine components.

In many cases the sections in the source document consist of scope so large that individual elements would link to more components in other sources more reliably if the section was separated into multiple subordinate components. In this case it may be necessary to separate this section into multiple components and create a coding scheme to identify these subordinate components. For example, to separate Section 2.1 from the table of contents into multiple subcomponents, separate it into subcomponents numbered 2.1.1, 2.1.2, etc. This numbering convention also applies to strategic goals and objectives where Goal 1 is 1; strategic objectives for Goal 1 are 1.1 to 1.N; and the strategic approach or implementation plan linked to the objective and goal would be numbered 1.1.1 to 1.1.N.

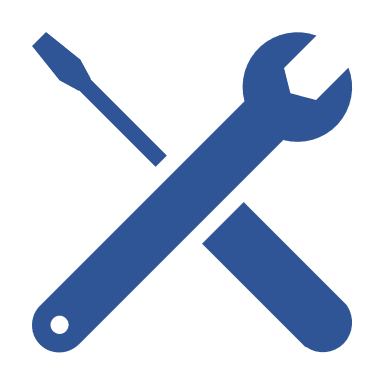
If you need to combine sections into a single component, indicate those sections and section names in the name of the components, e.g., 3.2.5– 3.2.6, Ordering Supplies – Obligating Supply Funds.

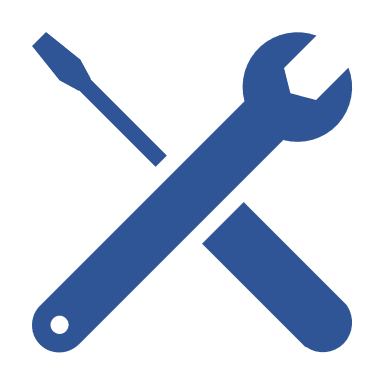
To make the linkages across these components reliable and valid, sometimes multiple components need to be combined into one, or alternatively, a component may need to be subordinated into multiple components.

Components are too large when a subcomponent would likely add measurable value to a component of another source. Components are too small when achieving their end-states does not result in measurable value. Sections in the source document might also consist of scope so small that delivering this scope might not change the state of components of other source documents in the governance structure.

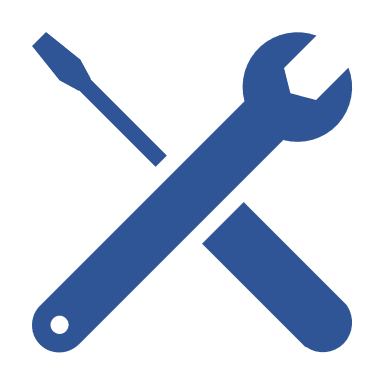
## How to record sources, components, and component descriptions in a data table

### Syntax for sources

Lead with Agency, title, and year, e.g., "Agency Strategic Plan FY 2028." This allows searchers to sort records alphabetically by Agency.



Embed the Source Name in the component because some queries return the component but do not include the source of the component in the query results.



Add the source document year to the title, which will facilitate queries related to timeliness (data freshness) and when source documents may need to be updated based on the organization’s document life cycle or review timelines.

### Syntax for components

Use imperative verb phrases to lead the component descriptions, such as "reduce costs," if these phrases are part of the original description in the source document.

### Syntax for component descriptions

Include the text from the source document that will identify this component when people perform relevant searches of the database.

Some document sections are "header" components with no defining text; there is no need to enter these. However, if a document section header has its own descriptive text, add it as its own component. This is because other sources can link to and from the scope in this text without linking to its subordinate components.

In some cases you want searches to find the component using keywords that that aren’t in the body of the text. Add these keywords at the end of the component description, e.g., "keywords: accessibility, interoperability".

# Crosswalks: Linking enabling source components to dependent source components

Sources consist of enabling components of independently deliverable organizational value. Enabling sources and components provide value to dependent sources and components. Crosswalks are sets of connections that identify these value paths from enabling components to dependent components.

## Three strategic goals of IVNs: Communicate Value, Increase Value, Increase Capability

1. Communicate value supplied by an organization to its governance network
2. Increase value supplied by an organization to its network
3. Increase the net capability of the network to create value

Different crosswalks apply to these goals in varying degrees.

## Examples of IVN goal crosswalks

What are examples of crosswalks that serve each kind of IVN goal (report alignments, increase the value in our current network, change the network to increase net value)?

### Crosswalks Reporting Alignments

A crosswalk that would communicate value could include the policies and strategic plans of an organization as enabling sources and Executive Orders and strategic plans of the Office of the President of the United States as dependent sources. This crosswalk could show how specific policies, plans, goals, and performance measures of that organization deliver value to Presidential governance documents, such as the President's Management Agenda and Executive Orders. This crosswalk could also inform a communication plan to communicate these value alignments to stakeholders.

As strategic plans are mapped to Presidential content such as Executive Orders and the PMA, other crosswalks can be chosen based on what message is desired to communicate about how the strategic plans are being applied to other outcomes as well. For example, “The President’s guidance provided incentives and insights to consider these enabling components, which the Agency realized enabled [descriptive] value in these additional dependent sources.”

### Crosswalks Increasing Value of the Current Network

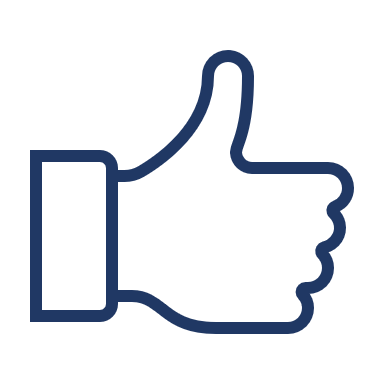
A crosswalk that would increase value supplied by an Agency program office could include the policies of that office as enabling sources and components to the overarching plans and goals of their superordinate Agency. This crosswalk could show the linkages of value, and recommendations to revise the organization's governance documents to increase the value across those linkages.

### Crosswalks Changing Network to Increase Net Value

A crosswalk that would increase the net capability of the network to create value could include every enabling source and component in an Agency that enables value to the priorities of the head of that Agency. This would show how multiple offices contribute value to the same priorities, supporting recommendations for those offices to change their programs and priorities collaboratively to create more net value to those shared Agency priorities.

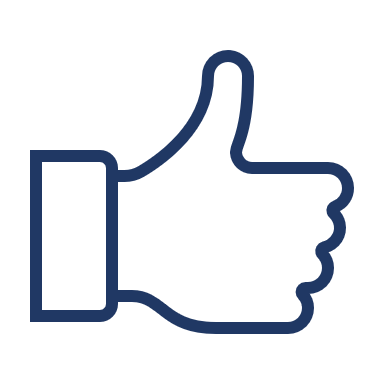
In addition to the above goals, the IVN serves as a test bed to research file and data formats to increase the automation-compatibility, computability and capability of artificial intelligence and machine learning systems to generate inferences and recommendations based on the IVN dataset.

# How to link components between two sources

****Developing a crosswalk between two sources is a straightforward process, but it can seem daunting when performing the steps for the first time. The training video linked below outlines a methodology for viewing each source in Excel and a web browser and searching for the keywords that facilitate finding the linkages between them.

There are numerous tool tips and heuristics that the presenter (Basil White) calls out in the crosswalk example so analysts should bookmark this resource for easy reference.

[Crosswalk example](https://www.youtube.com/watch?v=n9GaJUlY9vw)

****The overarching rule for identifying alignment between an enabling component and a dependent component is to ask the following question. If the enterprise delivered the enabling component as described in the source document, is that delivery likely (>50%) to change the status of the dependent component in a way that is objectively measurable? If so, record that alignment in the IVN dataset, including the enabling source, the enabling component, the enabling component description, the dependent component, the dependent component description, the dependent source, and filepaths or website addresses for both sources.

| **Enabling Source** | **Enabling Component** | **Enabling Component Description** | **Dependent Component** | **Dependent Component Description** | **Dependent Source** |
| --- | --- | --- | --- | --- | --- |
| The source document that contains components that deliver organizational value. Enabling source components "enable" the enterprise to progress closer to the objectives of "dependent" components in a different, "dependent" source document. | A requirement, goal, priority, or measure within a source that “enables” a “dependent” component within a different source to deliver its requirements. | Description of the Enabling Component. Can include the formal description, as well as keywords or other syntax that improves search results. | A distinct deliverable, goal, objective, or directive within a source that “depends on” or receives value from an “enabling” component within a different source. Report refers to the component in this field as “dependent” component. | Description of the Dependent Component. Can include the formal description, as well as keywords or other syntax that improves search results. | The name of the Source document that contains the related or “dependent” component. Reports refer to this as the "Dependent Source", because a component of this source "depends" on an “enabling” component in another source to deliver its requirements. |

*Figure 2: Table of Definitions*

|  |  |
| --- | --- |
| Tools with solid fill | It can be useful to add a “Last updated or validated” and “Responsible Office” fields to improve visibility or editing of the mapped linkages. Other fields may include website addresses for the sources, a website address to the crosswalk file, expiration dates of one or both of the sources, or notes explaining the alignment for each component pair.  A notes field explaining the alignment for each component pair is optional, but may inform the development of products based on that alignment. |

|  |  |
| --- | --- |
| Tools with solid fill | Do not attempt to map every Enabling Component or Dependent Component! The more dense the alignments in the Network, the less meaning and relevance we can infer from any one alignment. “When in doubt, leave it out”! Leave the unaligned components in your data, so that we can research and retrieve them for other research and development tasks. |

To complete your crosswalk efficiently, use a text file to read the component you’re mapping to another source, the keywords you want to search to find that component in the other source, the alignments you find; the “false positives” where the components share a keyword, but the enabling component does not add value to the dependent component, and keywords that do not appear in the other source. When you search for keywords, avoid suffixes so that your search finds versions of your keyword with different suffixes, like “quanti” so your search will find “quantified”, “quantitative”, etc.

Agency Data Strategy FY24-26 - Agency Data Strategy FY24-26 1.2: Measure and Maximize the Organizational Value Of Data And Analytics At Agency - We will measure and communicate the value of Agency’s data investment. To measure the value that data and analytics add to Agency mission delivery, we will develop suitable metrics to quantify the value of datasets and data products, consistently track data quality, and report progress on these metrics as they relate to performance, evaluation, and risk. We will also collect and share success stories to find additional ways to share value and promote transparency and accountability.

keywords: communicat missionx metricsx performance evaluat success best transparen accountab

aligns: 5.2.e 1.2.1.a 1.2.1.b 1.2.1.f 3.a 5.3.a 5.3.c D

does not align:

not in source document: invest quantif

Using a text file to record this information while you perform your crosswalk reduces redundant searching of keywords.

## Linking Components Both To And From Plans (note: Table/Fig title not a section)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Enabling Source** | **Enabling Component** | **Enabling Component Description** | **Dependent Component** | **Dependent Component Description** | **Dependent Source** |
| **Agency Strategic Plan** | Agency 2022 2.2: Build Resilient Food Systems, Infrastructure, and Supply Chain | Agency works tirelessly to ensure that the food system is fair, resilient, competitive, and distributed. Agency will continue to employ innovation and develop new markets... | Agency Equity 2: Reduce barriers to Agency programs and improve support to underserved farmers, ranchers, and landowners | Agency will take steps to reduce administrative, economical, historical, and other barriers to program access. | Agency Equity Action Plan 2022 |

*Figure 3: Example Table Depicting Linkage Between Enabling Source Document and a Dependent Source Document*

Plans tend to have their goals, measures and/or instructions sorted in a hierarchy within a source that “enables” a “dependent” component within a different source to deliver its requirements. Reports refer to the components in this field as “enabling” components.

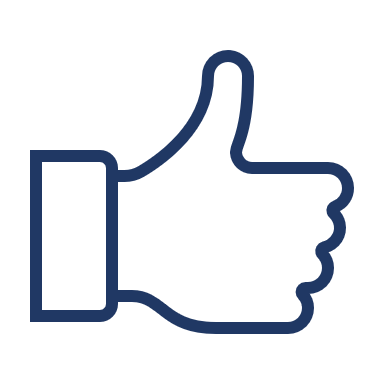
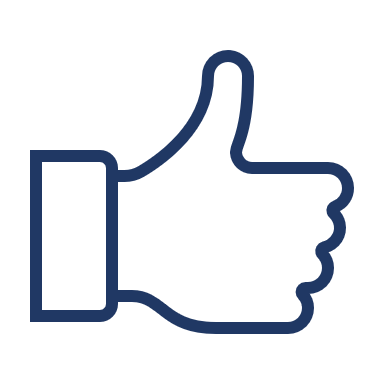
## Linking components to Public Law

Public Laws create, edit, or delete sections in the U.S. Code of Federal Regulations (aka U.S. Code or CFR). Public Law content functions as dependent sources and components in the IVN data structure. A Public Law can include thousands of these changes (<https://uscode.house.gov/classification/tables.shtml>).

One way to define a Public Law as a manageable set of regulations is to identify the U.S. Code regulations that are both 1) created or amended in the Public Law and 2) cited in OMB guidance for that Law. For example, the Federal Information Technology Acquisition Reform Act (FITARA) is part of the National Defense Authorization Act of 2015, Public Law 113-291, which has 728 U.S. Code references (<https://uscode.house.gov/table3/113_291.htm>).

The latest OMB guidance for FITARA (M-15-14 as per the latest version of this publication), only cites ten of these U.S. Code citations, a manageable inventory of citations to identify as "the FITARA regulations."

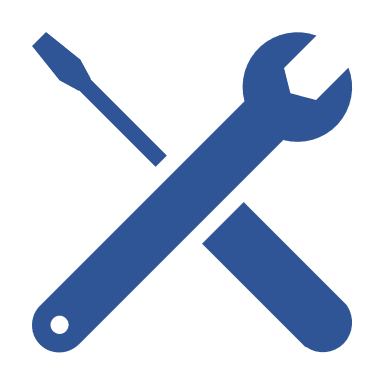
To identify in the dataset that these U.S. Code sections represent the inventory of FITARA and M-15-14, include FITARA and M-15-14 in the description for each of these ten U.S. Code sections.

****To build crosswalks and products linked to Public Law, search for OMB guidance. If OMB guidance exists, include that guidance as a dependent source, including the common Public Law title in the dependent source name (e.g., OMB A-130 Management of Federal Information Resources (Clinger-Cohen Act)) and include the U.S. Code cited in that guidance as dependent components (e.g., 40 USC 11101). Verify that these are in the Public Law using <https://www.law.cornell.edu/topn/0> instead of just cross-referencing the OMB guidance. Then map directives that cite these U.S. Codes as enabling sources and flag OMB U.S. Code citations not already cited in any directives to identify directives for revision to include those U.S. Code citations. If an enabling source cites the law by name, use that law name in the component description.

Check OMB for updates to guidance frequently. Some OMB directives and memoranda have high turnaround frequencies.

## Linking components to U.S. Code

U.S. Code content functions as dependent sources and components in the IVN data structure.

Identify U.S. Code with the title (e.g., 5 USC) as the source and the citation in the title as the component. For example, 5 USC 345(a) would have 5 USC as the source title and 5 USC 345(a) as the component title. Keep the title number in the component title so that queries of the components retain the title number.

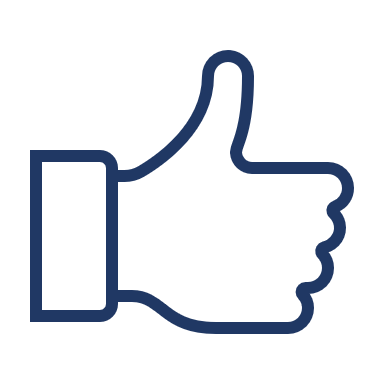
In the component description, enter data that will identify this citation in searches, including keywords in the superordinate title (such as chapter title keywords for a subchapter description), keywords in the subordinate sections within the citation, and Public Law acronyms and popular titles (e.g., FITARA, GPRAMA) that will identify these citations in searches.

## Linking components to and from CFR

The U.S. Code is a collection of Public Law citations passed by Congress organized by subject matter. The Code of Federal Regulations (CFR) is a collection of regulations adopted by Federal agencies.

CFR regulations derive their authority from these Public Laws. Therefore, when linking CFRs to USC, CFR citations are enabling components, and U.S. Code regulations are dependent components.

Policies can cite USC and CFR in their references and authorities. When recording a link from a policy to a CFR citation, enter these policies as enabling sources and components to CFR as dependent sources and components.

****Draft regulations are posted for public comment via regulations.gov. This can be a useful location to find the Agency’s recommended changes to existing regulations or new regulations, whose components and linkages will need to be modified in the IVN or added, respectively.

## Linking components to and from Federal policy

Federal policy, for the purposes of IVNs, is Departmental regulations according to 5 USC 301. Policies derive their authority from Public Law and U.S. Code that direct agencies to act on those authorities, the authority of the head of the Department (including delegations of that authority), and Federal laws and policies that are binding on the Agency.

Link policies as enabling sources and components to authorities of the policy as dependent sources and components.

## Linking documents published by peer organizations

Some documents are published by peer organizations that both directly report to the same superordinate organization, or do not have a clear hierarchical relationship to each other. In this case, perform two crosswalks to capture the value alignments across both directions.

## Linking documents not included in Federal Governance Structure

Some documents, like memoranda, are not part the Federal Governance Structure; however, they influence or are influenced by documents in the structure and enable delivery of the Structure. As such, it is appropriate to include these documents as enabling sources in the IVN not as dependent sources. Limiting dependent sources to documents in the Federal Governance Structure enforces the inheritability of authority to Public Law and Executive authority, so that documents that derive their authority from a source in the Structure are identified for revision when the authorities in the Structure change. Otherwise, agencies might cite non-authoritative policy based on authorities that are no longer valid. Memoranda from Federal organizations which direct action may not have any explicit legal or policy authority, but act on the authority of law and policy.

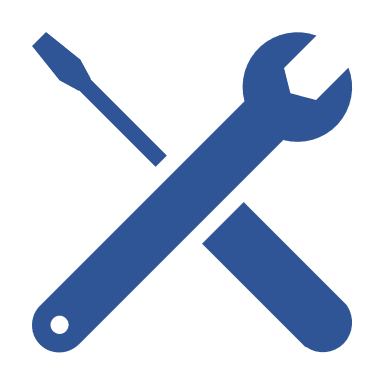
Many of these memoranda derive their authority from delegations of authority. These delegations are created by Federal agencies to act on authority granted to the Agency by law, by delegating that authority to specific officers or offices in the Agency. Agencies codify delegations of authority in the U.S. CFR.[[2]](#footnote-3)

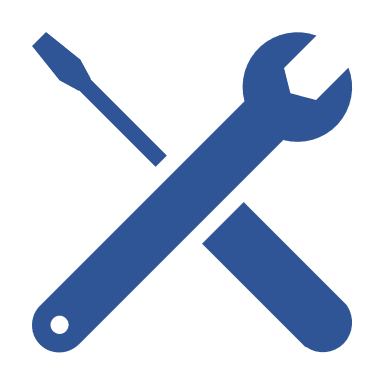
The IVN data design provides for enabling components that are not part of the Federal Governance Structure (FGS); however, try to limit dependent components to the FGS. This prevents chains of dependencies that can be broken by a change to a non-FGS requirement that is not subject to formal reporting like requirements in the FGS.

| **Enabling Source** | **Enabling Component** | **Enabling Component Description** | **Dependent Component** | **Dependent Component Description** | **Dependent Source** |
| --- | --- | --- | --- | --- | --- |
| Agency Memo: Communicating with Industry 2019-11-06 | Communicating With Industry | Agency acquisition personnel are permitted and encouraged to engage in responsible... | Section 208 | Officer or employee of the executive branch of the United States....Federal Advisory Committee Act, Ethics in Government Act of 1978 | 18 USC |

*Figure 4: Sample row from example IVN dataset that depicts enabling source and dependent source fields*

To prevent breaking the traceability of the data, it is a general best practice not to accept a policy or decision memo unless it can be linked to a delegation of authority. An exception would be policy or decision memo signed by the Secretary, as these, by definition, require no delegation of authority.

A component not aligned with any other component is not a mistake, but a valuable component of the inventory of all of the components for the production dataset for research and retrieval. Keep these unaligned components in your research data.

Your organization may want to add other, optional fields, such as “Last updated or validated”, “Responsible Office”, website addresses for the sources, notes, a website address for the linkage record, or expiration dates. If you add these fields, consider making them optional to avoid discouraging users from entering components with incomplete data.

# Quality Control Inspections of IVN Data

Data is of high quality when it satisfies the requirements of its intended use for clients, decisionmakers, downstream applications, and processes. IVN quality control analysts perform two activities: inspect IVN data for logical and syntax errors, and validate that delivering the Enabling Component would probably progress the Dependent Component toward its end state in some measurable way. These activities are crucial to ensure that the relationships in the dataset remain apparent and trustworthy as developers interpret the data into products that support strategic communications, program implementation and change management.

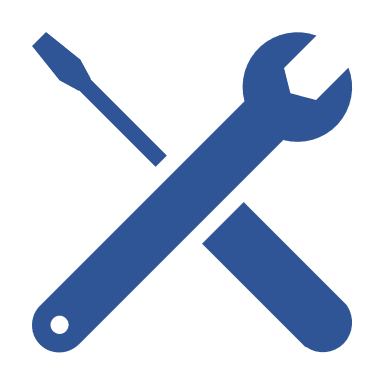
## How to inspect IVN data for logical and syntax errors

Note: There is an IVN QC checklist available as a tab on the production dataset.[[3]](#footnote-4) Open the checklist in the Excel application, not in a browser.

Refer to the figure above depicting representative rows and columns in an IVN dataset for the following instructions.

Inspect each column for validity. Then inspect the relationships across columns for validity.

Starting with the first column, look for obviously false data where the sources are not valid or recognizable “documents.” Delete rows that have blank enabling sources. Then evaluate the remaining enabling sources to ensure that they are not dependent sources. Some context switching of sources is possible, and that is generally the first source of errors or invalid data. Search enabling components (and enabling source) columns for duplicative or nearly duplicative syntax. In other words, one enabling component could have an *em* dash and then it could be repeated in another row with an *en* dash. Ensure that there are no nearly duplicative entries. (The same enabling source and enabling component can be reused if there are separate dependent sources and dependent components linked or mapped to it in subsequent rows.

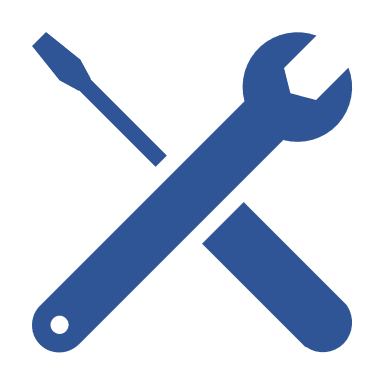
Microsoft Word applies autoformatting that may produce nearly duplicative entries that will require corrections. Consider the *em* dash versus the *en* dash and “smart” quotes. Replace the *em* dash with the *en* dash in and replace smart quotes with straight quotes.

Then search the enabling components for blanks. Each enabling source should have at least one enabling component. An enabling source with no enabling component indicates an error. Note: Sometimes sources will have blank components because they are in the queue to be mapped to other sources.

Enabling component descriptions can be blank, but they should contain content when content is available. Blank descriptions should be the exception and not the rule. Also check for duplicative component descriptions.

Delete rows that have blank dependent sources. Then evaluate the remaining dependent sources to ensure that they are not enabling sources.

Search dependent components (and dependent source) columns for duplicative or nearly duplicative “false unique” syntax. (See above text for clues on context switching and duplicative or nearly duplicative entries.)

The fields above are the only mandatory fields for IVN records. Develop and implement a data cleanup process that makes sense for any additional fields that have been added based on the organization's context or relationship to the Federal Governance Structure.

Before adding a new crosswalk to the database, a set of quality inspections is required. This is also part of the recurring administration and management of the data. Analysts involved in the quality control of the IVN dataset should shift orphaned sources to a new tab or table. This applies to source (whether enabling or dependent) inventories that do not yet have linkages. It is important to keep these sources, but they should be re-located or placed in separate tabs or tables to move them out of the ”clean” dataset (if using Excel for example) or database (if using a relational database).

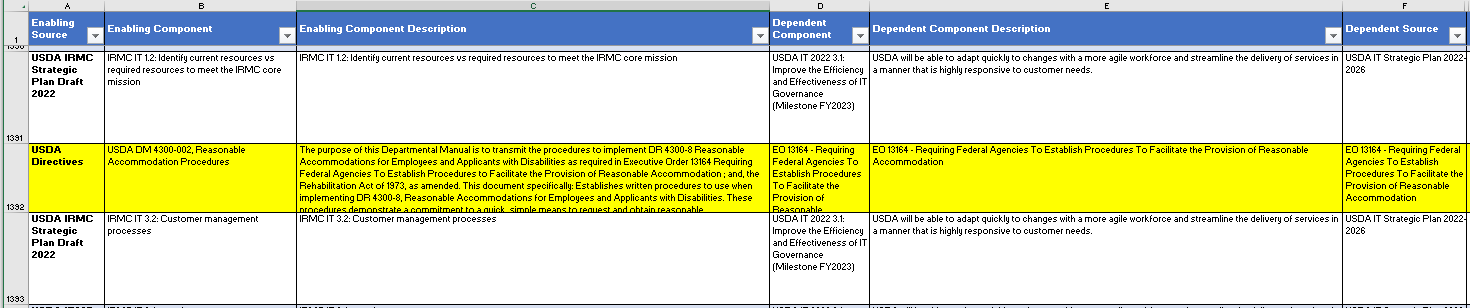
This does introduce additional complexity in mapping, so analysts need to look for and be aware of those other “orphaned” source tabs or tables when making new crosswalk assignments. Analysts should consider relational database effects driven by the orphaned sources (or at least consult with database subject matter experts), which may need to be included for other reasons whether or not there is another source mapped to them. Inventories (of sources) need to be complete so that the analysts are assured that they have considered all of the sources even if some of the sources are not yet mapped or will not end up being mapped for one reason or another.

Abbreviate component names so that components within a source don’t use the same syntax in the first ten characters. Some applications of IVN data only display the first few characters of the component name, so components named “Agency Strategic Communications Plan 2023 1.1” through “Agency Strategic Communications Plan 2023 6.4” will appear in some applications as “Agency Strategic Comm” for every component, so users won’t be able to isolate a single component from looking at the interface.

Search for “false uniques” where the same data appears as different data because of a misspelling or different grammar. Some false uniques can include URLs that include multiple examples of the same web page with different bookmarks to different sections in the same web page. Use your best judgment as to whether to keep these bookmarks.

In the case of Public Laws, try to avoid citing a Public Law if you can replace the citation with a specific citation in U.S. Code. Many Public Laws change regulations across several U.S. Code Titles, when in fact the reference to a Public Law may only relate to a single section or chapter in one Title. In the case of directives, when a directive cites a Public Law instead of U.S. Code, make a note in the Notes field to contact the directive office to request that they revise the directive to replace the Public Law citation with the specific U.S. Code citations that authorize that directive.

## How to validate rows of linkages



*Figure 8: Example IVN dataset as it appears in an Excel file or worksheet (may not reflect current source titles or descriptions)*

Validate that delivering the Enabling Component would probably (>50%) advance the Dependent Component toward its end state in some measurable way. Delete the rows that do not meet this criterion (“when in doubt, leave it out”).

QCs of inventories only include one governance document, so these datasets do not have any linkages to validate.

# Quality Control of Production Dataset

After each incorporation of a crosswalk into the production dataset, perform quality control checks of the entire production dataset, using the same actions above to perform quality control of a single crosswalk. Do not perform quality control checks of any crosswalks you helped to create or revise.

# Optional: Merging multiple data tables into IVN dataset

In many cases, the data you need for the IVN dataset will require multiple data tables. In this case, no single table will have all the fields you need, and some tables may have fields that the IVN dataset does not require. The instructions below explain how to merge multiple tables of data into a new IVN dataset.

* Generate the new data tables you need to create the final dataset table.
* Open a copy of your current dataset table.
* Add several columns to the left of a new data table.
* Copy the headers from the current dataset table.
* Copy each header cell to the header for the column of new data that contains data for that header.
* Delete columns in the new data that do not match any of the headers.
* Re-sort the columns so that they align left to right in the order of your original dataset.
* Delete any blank columns to the left of your dataset.
* Continue this process for the rest of the tables of new 4

**How to prepare crosswalk development files**

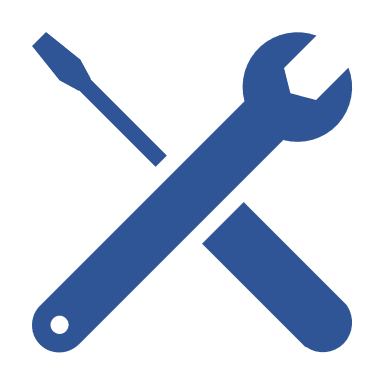
In this case, the files needed to develop a new crosswalk consist of two tables. The first table lists all of the Enabling Sources and Components for the desired crosswalk and nothing else. The second table lists all of the Dependent Sources and Components for the desired crosswalk and nothing else.

*Figure 5: Example Enabling Sources and Components Table*

*Figure 6: Example Dependent Source and Components Table*

Each table should only represent one Source. If you are mapping multiple Enabling Sources or multiple Enabling Components, separate these mappings activity into multiple tables so that your crosswalk development files cite either one Enabling Source or one Dependent Source.

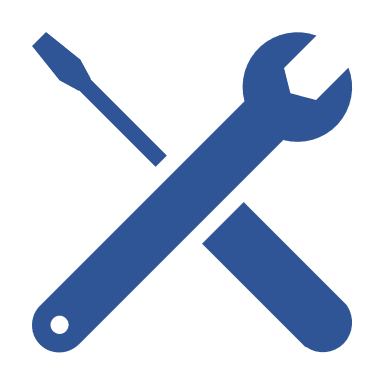
If the production dataset already includes all of the Enabling Components and Dependent Components being analyzed, it might be possible to minimize rework by copying the production database to both of the crosswalk tables and deleting the records for sources other than the source that is being crosswalked.

Name each table with a reference to the sources in each table and the suffix (Enabling) or (Dependent) to identify the source types.

*Figure 7: Example Table (Tab) Naming Convention*

To complete the data for a crosswalk, compare every Enabling Component to every Dependent Component, and add a record every time delivering an Enabling Component is >50% likely to move the Dependent Component toward its end state in a measurable way.

To make these comparisons efficiently, count the number of unique Enabling Components and number of unique Dependent Components, and map all of the components with the greater number against each component with the lesser number, one at a time. For example, if your Enabling Source has seven unique Enabling Components, and your Dependent Source has 11 Dependent Components, it is more efficient to map each Enabling Source one at a time against all of the Dependent Components (seven iterations) than mapping all Enabling Sources against each Dependent Source one at a time (11 iterations).

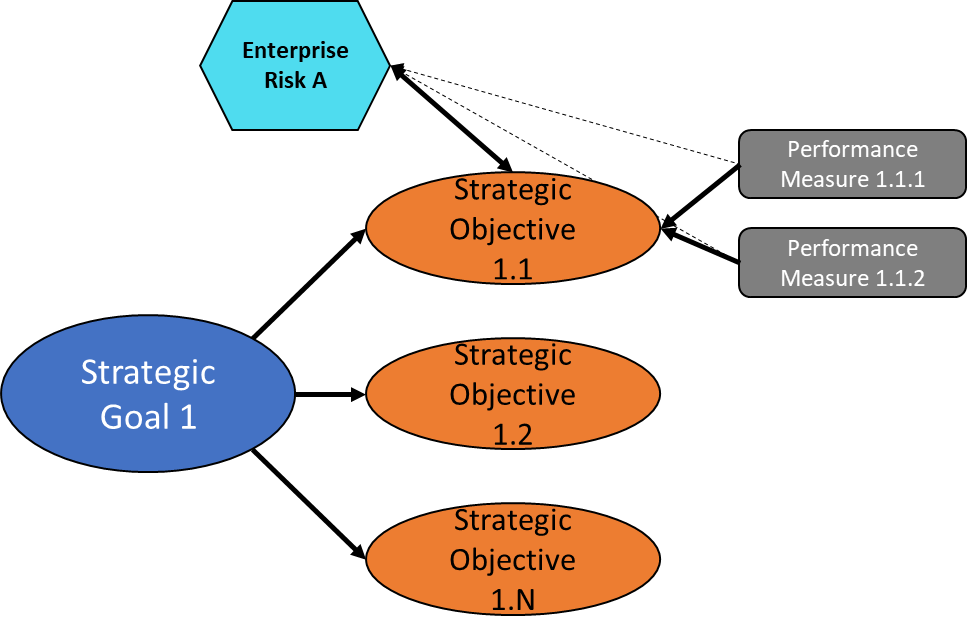
To facilitate mapping elements into the crosswalk through the “find” function in Excel, open an instance of a text editor and type in stems of words that could be found in each table. For example, type “availab” to enable finding “availability” and “available” or “suppl” for “supplied” and “supply.” Then use the word stem in the “find” function of Excel in the appropriate tab (or file) to search for the word stem by sheet in Excel. If the word stem is found in the dataset, evaluate the word stem’s context for applicability to the enabling / dependent source pair. If it is applicable, then copy the appropriate data from the source component and paste it into the appropriate row in the other source document file or tab. (For example, if “suppl” finds “supplied” in an enabling source component that is an applicable and relevant mapping to a dependent source document, then copy the enabling source component data (the row across three or more columns potentially) and paste that data into the appropriate row under the appropriate columns for the enabling source component.)

Validate that the URLs for the governance documents are correct, and that each citation of the same governance document cite the same URL.

# Data traceability

## How to evaluate traceability of value across three or more sources

The IVN uses crosswalks to identify relationships between two (2) sources at a time. Together these crosswalks create a network that shows how multiple sources relate to each other through value connections between and among their components. Some components add value directly; some add value indirectly. For example, strategic plan objectives relate to enterprise risks as well as performance measures. The IVN can identify (make visible and apparent) how effectively the performance measures indicate or correlate to the likelihood and impact of a particular (enterprise) risk by considering how performance measures connect to enterprise risks by way of the common strategic plan objective they share.

These indirect connections serve the three goals of the IVN (communicate value, increase value, adjust network to receive more value). Indirect connections (value) allow communication on how governance documents align in ways that were never intended or anticipated. The connections also allow adjustments to governance content to increase its indirect value downrange. Also, these indirect connections can influence downstream recipients of value to look at or consider enabling components as early indicators of value and process improvements.

*Figure 9: Example of relationships among strategic goals, objectives, performance measures, and enterprise risks*

# Reverse-engineering new IVN sources

## How to reverse-engineer new sources from a value network

Enterprises assimilate, advance, and accommodate goals, capabilities, skills, responsibilities, budgets, and opportunities to provide value. In some cases, this requires original development of policies, plans, objectives, performance metrics, and operations that have no direct equivalent in the current state of the enterprise. Using the current IVN for an enterprise as a guide or starting point, analysts can build an inventory of new, unmet goals, regulations, performance metrics, objectives, or plans and use this inventory as a new subnetwork to uncover new value sources for the enterprise (uncover more opportunities to add value). One way to do this is to create “placeholder” sources that may not have any current scope, mission, or vision and build crosswalks that align the “as is” components to this placeholder source as well as new sources and components that define the currently unmet need or requirement. This new subnetwork then becomes the criteria that defines the scope of the placeholder sources, including plans, concepts of operations, staffing models, training, budgets, and legislative proposals.

# How to create IVN Value Integration Reports (VIRs)

The overarching goals of Integrated Value Networking are to 1) report value transactions across policy, 2) direct programs to increase the value of those transactions, and 3) create new governance documents, such as strategic plans, policies, metrics and programs to increase enterprise net value. Governance documents that serve those goals, in order, include the following.

* Environmental scans of how a policy affects specific sources and components in the Federal Governance Structure.
* A plan to create or edit a policy or plan to strengthen or create new value transactions.
* Proposals for new business lines or Public Laws to create or increase value transactions to stakeholders.

Therefore, when considering what VIRs to build, review the requirements on your organization to report value, increase the value it supplies, and influence stakeholders to increase net value across the Federal Governance Structure.

Here are the steps to creating a VIR.

1. Create a new blank Value Integration Report (VIR) based on the template.
2. Choose a governance document and all of its crosswalks, both as an Enabling Source and Dependent Source. This governance document will function as the Baseline Source.
3. Paste the Baseline Source alignments into the VIR from the dataset.
4. Read each Baseline Source component, read all of its alignments to the other sources.
5. Contribute to the draft by creating a comment and suggesting recommendations for the strategic communication, implementation and development of the governance document supported by IVN research based on all of the alignments for each Baseline Component.
6. If an alignment does not seem accurate, remove it from the VIR and the database.
7. Populate the appendixes with content from the body of the VIR.
8. Summarize all of the recommendations in the Executive Summary.

## Responsibilities of IVN Working Groups

TBD, please add your own topics for consideration!

Roles for IVN Working Groups will evolve based on group decisions. Also, changes to this IVN Working Groups description facilitates both group agendas and deliverables.

* Recruit subject matter experts (SMEs) and respective stakeholders to the Working Group.
* Request client points of contact (POC) from responsible office for making policy using evidence from VIRs and IVN research.
* Set preliminary research agenda for each Value Integration Report (VIR) and revise research agendas with Client PoC.
* Appoint Research Director for each Value Integration Report (VIR).
* Initially and iteratively populate VIR template with IVN inventories and crosswalks.
* Collaborate and participate in VIR briefings.
* Review research assignment statuses for VIRs.
* Prioritize research projects using research agendas. Also, define subset of research projects with data requirements prior to distribution of VIR drafts for comment.
* Review backlog unassigned sources for research consideration.
* Develop a VIR implementation and tracking plan.

Any additional content from the Working Group agendas

## Role of IVN Product Lead

TBD – follow direction of IVN Working Group, develop product, edit product with client, co-present product to client

## IVN crosswalks in Agency reports

IVN crosswalks are used to create specific analyses and reports that support the following objectives:

* Provide a basis of evidence to develop and revise governance documents and petition change to Public Laws and Executive Branch policy in the Federal Governance Structure that affects applicable Agency operations, to increase the net value that the enabling source(s) delivers to the Agency and its customers and partners.
* Support coordination and communication of goals and objectives to the Agency’s leadership and other key internal and external stakeholders.
* Improve Cross-Organizational Collaboration on Key Performance Indicators (KPIs), identification of redundancies, gaps and strengths of governance interdependencies, systemic awareness of the causes and effects of operational value across the enterprise and how to increase that value.
* Discover portfolios, programs, and governance (organizational) structures that add value due to previously unidentified alignments.
* Credit programs and governance for previously unknown alignments to organizational performance metrics.
* Improve regulatory compliance and tracking of regulatory compliance, while providing access to a broader inventory of alignments to regulations for policymaking, planning, testimony, and legislative proposals.
* Provide professional development opportunities for Agency staff in program management, policy analysis, and performance reporting.

The IVN crosswalk simplifies the process of drafting policy and Federal governance document reports while also providing a foundation for realizing and uncovering the value that has been hidden or disconnected in the policy and Federal Governance Structure. The IVN provides policymakers with networked and connected artifacts, which provide decision-quality information in a structured and repeatable format.

## Build products for strategic communications

IVN analysts use the crosswalks to generate products that communicate the relationship(s) across governance documents in the Federal Governance Structure and documents that relate to the Federal Governance Structure. These products take the form of text and hypertext documents, interactive network graphics, and interactive tabular datasets. The products, in general, have the intent to support strategic communications from enabling source document owner to the dependent source document owners in how the scope of one supports the other. This effect has manifested in testimony, legislative proposals, speeches by Executive Branch leaders, directives, and Agency concepts of operations.

## Increase value provided to network (additional linkages)

In many cases, the value that an enabling source owner provides to a dependent source owner is unknown to either side of this value equation. For some domains such as healthcare and information technology, the known (expected) value streams in the domain can be a small fraction of the overall value that the IVN reveals. (use transcript)

For example, a hospital construction policy can affect measurements of access to care which can affect measures of (veteran) suicide prevention. This means that, indirectly, the managers of hospital construction operations provide indirect value to the organization's suicide prevention strategy.

## Increase network’s net value

Imagine a bird’s eye view of an electrical power grid. Imagine all the substation nodes and connecting high-power lines that make up the grid. Keep that picture in mind so that you can visualize how a new substation (node) will add capacity (value) to the larger grid (network).

Now imagine that it is possible to increase the capacity of the grid substation by substation so that new nodes or connections make immediate contributions (add value) to the grid. As the grid (network) grows, the capacity of connections to receive and transmit even more value to existing nodes from additional or new nodes grows. There is a direct – and in many ways non-linear - relationship between the net value of the network and the number of connections an Agency generates from its source documents to the Federal Governance Structure.

A concrete example is working with legislative proposals. Achieving results and goals depends on policies, which rely on laws and regulations for their authority to direct action. Demonstrating how an operation can provide more value in a different regulatory and legislative environment provides an evidential basis for the rationale for changing laws and regulations.

Another method to increase the net value of the network is to identify new ways of organizing resources and people and responsibilities to collect expertise that is not currently organized in the enterprise. For example, an Agency might be responsible for biohazard emergency preparedness, and may already have policy and planning responsibilities that require that expertise, but those experts in your organization do not report to the responsible officer for that problem domain. Building a map of how the organization of laws, regulations, goals, priorities, and measures aligns to a new Agency officer or Agency office provides for an evidentiary basis for re-aligning human capital resources. Thus, realignment of resources is a complementary (low-cost) method for increasing the net value of the network where the benefits of realignment can vastly exceed those costs.

## Gathering research for an IVN product

TBD – include here how to identify the crosswalks you need for a product, based on the intent of the product (stratcomm, implementation, change management) and the history of the information that informed prior versions of the governance documents mentioned in the product.

### Role of Client Point of Contact (PoC)

Need text here on the role of the Client Point of Contact (PoC), including “the art of the possible”, validating the alignments in the research, leading the product implementation, and strategies for communicating the product, implementing the product, and using the product as a basis of evidence for policy transformation.

## IVN product outline

The IVN crosswalk provides a readymade outline or table of contents structure as it is easy to use the source document mapping from the crosswalk to generate the report (product) outline as shown in the figure below.

There is an [IVN template](https://usdagcc.sharepoint.com/sites/MRP-APHIS-MASPM/Shared%20Documents/Integrated%20Value%20Network%20(IVN)%20Team/IVN%20Products/templates/ValueIntegrationReportTemplate.docx?web=1) for your use. Please communicate with the IVN team about any questions, comments or revisions you have to the template.

### Adding IVN Alignments from Dataset

Copy and paste the Source Component and its description from the Baseline Source. Underneath that component, include the Source Components that align to it from the production dataset. If the Component Description in the dataset is not sufficient for you to understand the Component, revise the Component Description in the production dataset before you proceed. If you find spelling, capitalization, or grammatical errors in the production dataset content, revise the production dataset content before you proceed. If you do not understand or agree with the alignment in the dataset, do not include the alignment in the report, and delete that alignment from the production dataset before you proceed. Make sure that if you edit a source, component or its description in the production dataset, make sure that both the Enabling and Dependent versions of these fields have identical values.

When you make these corrections, please consider suggesting revisions to the crosswalk and/or quality control inspection portions of this document to minimize the need for these corrections in future reports.

### IVN Alignment Recommendations

For each alignment, include a recommendation to communicate, leverage, and/or transform the alignment. Whether you choose to include a recommendation for each alignment to a Baseline Component or a summary recommendation for all the alignments to one Baseline Component depends on whether the organization intends to communicate, leverage, or change the Baseline Source, or other aligned documents. For example, if the intent of the report is to guide messaging about a recently published version of the Baseline Source (Level 1), a recommendation for each alignment would support that messaging to communicate the broad, systemic effects of the Baseline Source. If the intent is to leverage the alignments as written to transact more organizational value (Level 2), this would also require a recommendation for each alignment. If the intent is to transform (or develop) the Baseline Component so that the scope of that Component transacts more value across its alignments (Level 3), this requires only a summary recommendation for each Baseline Component.

#### IVN Level 1 Report: Communicate the alignment

Recommend how to communicate the alignment from each component in the Baseline Source to components of other sources, or a summary recommendation for all the alignments to one component of the Baseline Source. These recommendations could include public messaging, arranging an event with the organizations that maintain the sources to promote the message of how the organizations deliver value to each other, or revising the descriptions in updates to the source documents to mention this alignment.

#### IVN Level 2 Report: Leverage the alignment

Recommend how to implement Agency Food Security Pillars, within their scope and operational discretion as defined in the source document, to maximize the net value they deliver to UN Food Security Dimensions. This could include budget, staffing and operational changes within the current scope and operational discretion of the Agency Food Security Pillars.

#### IVN Level 3 Report: Transform the alignment

Recommend how to change the source documents maintained by the client organization to increase the net value they transact across their alignments. In the example above, these changes could include:

* Budget, staffing and operational changes beyond the current scope of the Agency Food Security Pillars.   
  Recommendations to reach out to the UN to change the UN Food Security Dimensions to receive more value from the Agency Food Security Pillars.
* Creating or changing separate components in sources outside the Agency Food Security Pillars or UN Food Security Dimensions, to increase the net value, efficiency or capabilities of the network, such as a new program directive that delivers on both sources.

### Opportunities for realignment

In the report, include a section of potential alignments that might align upon revision, so that the analysts can review these components to consider revising them to make the alignment (or nonalignment) more explicit.

## IVN product briefings

The overarching goal of IVN product briefings is to increase the likelihood that IVN recommendations are implemented by the Baseline Source organization and their chain of command. Product briefings provide the requestor of the product and their chain of command the information that makes the product and its recommendations more specific, measurable, achievable, relevant, and time-bound (SMART). The IVN team works with the requestor to verify that the requestor agrees with the recommendations, and that they meet the SMART criteria, including that stakeholders directed to implement the recommendations have sufficient authority to do so.

The first briefing to the Baseline Source organization Point of Contact (PoC) should include the product and presentation media for the product with enough time in advance for the requestor and their colleagues to review the product and make changes prior to the briefing. To increase the likelihood that IVN recommendations are implemented, it is recommended that the IVN team finds multiple opportunities to work with the requestor and their colleagues to validate their agreement with the recommendations.

If Baseline Source organization Point of Contact (PoC) does not agree with an alignment in the report, remove that alignment from the report, and delete that alignment from the production dataset.

Briefing materials consist of the product and presentation media that wholly consists of content from the product. It is appropriate and desirable to include additional content in the discussion at the meeting but confine the presentation media content to the content from the product. This constraint prevents stakeholders from using the briefing deck as a planning document.

Do not edit the planning document in a way that could reflect on the product. This is to prevent editing the product or modifying the implementation of the product based on edits made to the presentation document (slide deck).

Once the briefing has been scheduled, part of the first briefing to the requestor of the product is to develop a plan based around the appointment. To assist the requestor in a briefing to their chain of command, first explain the recommendations – why these recommendations and how the plan for implementing them is anchored to policy and operations. Then branch into the mechanics of receiving agreement from their chain of command to develop a plan to implement the recommendations outlined and described in the product. This allows for multiple refinements of the product and its recommendations: once with the requestor before you deliver the product for the briefing to the requestor, once during the briefing with the requestor, and then before the briefing that the requestor provides to their chain of command.

## How to track implementation of products

Once there is a product, research and analysis need to be communicated to appropriate stakeholders to relate value. Through the research on determining how sources add value, alignments have been identified, and these alignments need to be communicated for subsequent policy alignment and integration and to change the governing structure – while remaining mindful of the context of the (cumulative) network effects.

Develop implementable products that are stored in the IVN. Implementation of research and analysis (through recommendations) is the crucial turn that provides value from the IVN. Therefore, build “defense-in-depth” to make the recommendations in the IVN products as implementable and trustworthy as possible. This effort provides clarification and proof of evidence of the analysis of the risks and impacts of applying these insights.

IVN data and its subsequent reporting provides evidence-based foundations for change. It is important to address sensitivities that organizations must change in general and how changes are managed in the organization. Through its organizational policy, office, program, and directives alignments and linkages, the IVN provides a relatively comprehensive change management framework.

The bottom line is that the business value of the IVN occurs after a significant amount of labor and work. However, IVN work is vulnerable to its acceptance and implementation. People want to see the results of a survey but need to commit to actionable results derived from the survey first. Work with the product requesters to obtain leadership commitment to the implementable recommendations from the IVN products. A commitment to not just consider but implement the policy changes and recommendations that the IVN uncovers is critical. In other words, the thing that provides (ultimate) value is implementation. Recommendations should be as implementable (concrete and explicit) as possible. Shorten timelines for policy recommendations or policy changes that require integration of information that is not currently on hand. The IVN can and should make that information available. What drives additional crosswalks and additional reporting are short-fused, high-impact policy analyses from customers.

# IVN demonstrations

## How to demo IVN to new stakeholders

Typically, stakeholders are members of the organization or entity who have editorial or content control of an enabling data source in the dataset. (Exceptions to this statement should be anticipated.) Briefings to stakeholders will occur for any number of reasons that require insights and perspectives provided by the IVN. Stakeholder briefings are generally geared toward “dependent” source value recipients (that may include White House staff) or agencies with shared strategic goals (cross-APGs) or performance measures.

The first step in briefing stakeholders requires developing the description of the (stakeholders’) problem that the IVN can solve. The problem can be articulated as a need for more situational awareness of the interdependencies in the Federal Governance Structure or for how policies, plans, directives, budgets, goals, or metrics can be better integrated to create more value for the organization.

There has not been an indexed source of cross-referenced documents that the government uses to coordinate and report on work. The IVN is the indexed source because the primary content for the IVN is a set of mandated governance documents with mandated relationships across them. When there is a set of objects with mandated connections (or linkages), there is a network. The IVN depicts that network so the transactional value between entities (enabling and dependent sources) can be demonstrated and articulated in briefings that support achieving the following three objectives:

(1) Demonstrate how the IVN can be used to identify and communicate the network (interdependence) of the Federal Governance Structure and the role of stakeholders in it. This objective includes identifying and understanding the transactional value that is realized through the connections between enabling and dependent sources.

(2) Use the IVN as a basis of evidence to communicate and implement change(s) to a (sub)set of the governance structure to increase or create more value within an organizational boundary.

(3) Use the IVN as a basis of evidence to support recommended changes external to the organization so that the entities outside the organization can achieve (receive) greater net value.

IVNs, by design, contain the content needed to achieve the first goal above. By creating an IVN and applying data from it to policymaking and strategic planning, Federal agencies and other stakeholders can improve transparency, accountability, and public trust in government, and demonstrate the value and impact of their work. Consider preparing the data so that the stakeholders being briefed observe the outputs or products from their enabling sources creating value and possibly perceive the value they receive from dependent sources.

For a briefing to achieve goal 2 (support internal change management) it is necessary to identify the enabling sources within the discretion of the organization sorted by external organizations that receive value to serve as a basis of evidence for a plan to revise the policies of the owning organization to add more value to the receiving organizations (create more net value). The IVN approach can help Federal agencies and other stakeholders create value for all Americans by identifying and leveraging opportunities for innovation, growth, and improvement.

For a briefing to achieve goal 3 (promote external change), briefers should consider the value paths in the network to support the external stakeholder changing their governance to receive more value from the enabling source documents (organization). The IVN approach can help Federal agencies and other stakeholders identify and address systemic issues and root causes of problems, rather than just treating symptoms.

A hybrid briefing of goals 2 and 3 would include a reorganization plan. For that briefing, include and use those dependent components shared by the reorganizing groups to re-draw the lines of responsibility. Analyzing and articulating the net value that all stakeholders provide to a single component enables viewing value as a single source that can be normalized to realize net value from the reorganization (new thing).

## How to train new IVN data analysts

Integrated value networking requires an understanding of the concept of scope as defined in the fields of project management, program management, and business analysis. The Project Management Institute (PMI) defines project scope as the work performed to deliver a product, service, or result (capability) with the specified features and functions. For the purposes of IVN, we adapt this concept of project scope as our definition of value. In other words, the scope of a goal, measure, or regulation, or order is the definition of the end state of that governance document. So, when governance sources and their components add value to each other in a network, it means that delivering the scope of the governing source component delivers some objectively measurable feature of the scope of another governance document.

Therefore, to train new IVN data analysts, the analysts should have these fundamental concepts down so that that they will understand how they are related:

* Value
* Scope
* Policy
* Directive
* Regulation
* Strategy
* Goal (strategic)
* Objective
* Performance measure
* Relationships between laws and regulations (public laws affect US code and CFR)

Sources for understanding these concepts include A Guide to the Project Management Body of Knowledge (PMBOK), other PMI references (The Standard for Project Management) that support the PMBOK, and [OMB’s Circular No. A-11](https://www.whitehouse.gov/wp-content/uploads/2018/06/a11.pdf) (2022). Additional amplifying information for these concepts can be found in the [Program Management Improvement Accountability Act](https://www.congress.gov/114/plaws/publ264/PLAW-114publ264.pdf) (PMIAA) and the [Government Performance and Results Act Modernization Act](https://www.congress.gov/111/plaws/publ352/PLAW-111publ352.pdf) (GPRAMA). Find citations for laws and the OMB guidance for those laws that define program, project, portfolio, and other concepts (legal and enforceable).

After this, new analysts need functional definitions of integrated, value, and networks specific to IVN analysis. Integration equals the connection of distinct elements to support each other or support a common goal or to receive value from a shared source. Also, analysts need to understand the net effect of these connections. Value is the net effect or result of the importance, worth, or usefulness of measurable change. This includes monetary worth, quality of life, or increased information (knowledge), and proof of compliance.

A network is the representation of elements and their relationships to one another. A network is a set of elements and their connections. Note: Networks can include elements with no connections; a disconnected element also has meaning and value to an IVN.

Once new analysts understand these principles and demonstrate their understanding by providing examples of them, they are ready to explain or describe the three primary goals of the IVN:

1. Represent goals, rules, measures, and procedures as a network of governance that enables each element in the network to generate and receive value.

2. Apply insights from this understanding of a network of value to change the network to increase the output of value.

3. Apply the insights from this understanding of the network to influence other organizations to change their relationships in the network to receive more value.

Provide datasets and products that achieve each of the above three goals so that the analysts can generate datasets, create products, and interact with IVN customers to define requirements for new products.

# Maintaining an IVN product backlog

As the IVN dataset develops, the data will reveal opportunities to develop analysis products to help leaders communicate, increase and transform value. Maintain a product backlog sorted by delivery priority as set by the senior leader responsible for IVN operations. Within each product in the backlog, build a prioritized list of the crosswalks that product requires. As you assign IVN analysts to each crosswalk, add the name of the analyst to that crosswalk, and create a separate record for that crosswalk to track delivery separate from other deliverables. This backlog should include the same sequence of operations as this SOP.

## Find additional linkages (customers) or value

At this point (after one iteration), the Agency can employ the IVN in meaningful (if incomplete) ways. The IVN provides incentives for interagency collaboration, cross-Agency collaboration, and more effective value transactions within the organization. Over time, the organization will be able to increase net value as the integrated value network (uncovered via the IVN) grows organically.

## Select new enterprise domains for mapping

At this state the IVN should reveal opportunities to leverage the current alignments in the dataset to sources from an enterprise domain that is not currently aligned in the dataset. For example, if the alignments recorded in the dataset started with the domains of information technology and financial management, and many of those alignments support capital planning, capital planning might be the next enterprise domain to map. Often, however, the products built from the IVN data create customer demands for specific products, which will drive the priorities of what sources to add to the dataset. In the planning phase for a product release schedule, remember that one of the goals of the IVN is to depict the legally mandated relationships across governance documents. Business priorities aside, try to complete and maintain these mandated governance relationships as a top priority. New domains also emerge from customer demand, legal requirements, or application of IVN data and analysis to enterprise challenges.

## Checklist for an IVN Inventory

1. Check the production dataset to make sure there isn’t already crosswalk data that includes an inventory of the governance document. If this data is already included, mark this assignment as complete. However, make sure the publication year of the governance document is the same in the production dataset and the assignment.
2. Make a local copy of the production dataset. Use this copy to create a worksheet using the same columns as the production dataset, with only the records for the governance document. The governance document might be listed as either a Dependent Source or an Enabling Source. If the production dataset does not have the governance document, create it in your worksheet and build the inventory of its components in your worksheet.
3. Make sure every mention of the source includes the year instead of “old” or “new”: replace “old” or “new” with the actual year of publication, or the year when requirements in the source take effect. For example, a plan that takes effect next year would include the number for next year in the title. Put the year of the publication at the end of the title so that versions of the same document sort adjacent to each other alphabetically.
4. Check the original source material to make sure that the table includes all of the components; if not, add these components to your table.

## Checklist for an IVN crosswalk

1. Check the production dataset[[4]](#footnote-5) to make sure there isn’t already crosswalk data that maps the Enabling Source to the Dependent Source. If this data is already included, delete this task. \*\* Before you delete, \*\* make sure the publication years of the sources are the same in the production dataset and this task. Put the year of the publication at the end of the title so that versions of the same document sort adjacent to each other alphabetically.
2. Make a local copy of the production dataset for your Enabling Source. Use this copy to create a worksheet using the same columns as the production dataset, limiting your copy to only the records for the Enabling Source you intend to crosswalk, along with its Enabling Components, Enabling Component Descriptions and Enabling Component URLs. Your Enabling Source might be stored in the dataset only as a Dependent Source, in which case, you’ll need to edit your version to reformat it as an Enabling Source.
3. Make another local copy of the production dataset for your Dependent Source. Use this copy to create a worksheet using the same columns as the production dataset, limiting your copy to only the records for the Dependent Source you intend to crosswalk, along with its Dependent Components, Dependent Component Descriptions and Dependent Component URLs. Your Dependent Source might be stored in the dataset only as an Enabling Source, in which case, you’ll need to edit your version to reformat it as a Dependent Source.
4. If the production dataset does not include one of your governance documents, create it in your worksheet and build the inventory of its components in your worksheet. Make sure every source title includes the year instead of “old” or “new”: replace “old” or “new” with the actual year of publication, or the year when requirements in the source take effect. For example, a plan that takes effect next year would include the number for next year in the title. Put the year of the publication at the end of the title so that versions of the same document sort adjacent to each other alphabetically. Read the Dependent Source document to make sure that the table includes all of the components; if not, add these components to your table.
5. Map the components in the Enabling Source to the components in the Dependent Source. Do not delete components that do not align; other researchers will use these components look for alignments with other governance documents. Keep all the components in your dataset whether or not they align to a component in the other Source.
6. Create a new task separate from this one called QC (name of Enabling Source) to (name of Dependent Source) crosswalk. In the Notes field of this new task, include these four instructions:

1) QC (Enabling Source) to (Dependent Source) crosswalk at (URL of your crosswalk) - don't QC your own research!

2) Open the production dataset and save a backup copy in the archive folder with a date stamp in front of the filename as /archive/yyyy-mm-dd-(agency)-IVN-dataset.xlsx

3) Reopen the production dataset.

4) Copy the crosswalk to the production dataset as per the SOP “Adding Inventories and Crosswalks to the Production Dataset” Section.

1. Add the four instructions above as checklist items in the new QC task you created.

## How to assign Research Projects

1. Open the top-priority draft VIR with missing crosswalk data.
2. If all the draft VIRs have all of their crosswalk data, start a new draft VIR.
3. Look for assignments in Planner related to the first crosswalk needed for the top-priority incomplete VIR, including QC assignments, crosswalk assignments and inventory assignments.
4. If a QC task exists, and someone's on it, offer help.
5. If a QC task exists and no one's on it, assign it.
6. If the crosswalk is in the dataset, assign someone the task of putting it in the VIR.
7. If a crosswalk assignment doesn't exist, see if inventory, crosswalk and QCs task exists.
8. If a crosswalk exists and someone's on it, offer help.
9. If a crosswalk exists and no one's on it, assign it.
10. If an inventory task exists, and someone's on it, offer help.
11. If an inventory task exists and no one's on it, assign it.

# Adding Inventories and Crosswalks to Production Dataset

Go to the directory of the production dataset.   
 And copy the production dataset to the archive folder underneath it.   
 Rename the copy you just created to include the year, month and date of today as a prefix to the file name, e.g., for May 23rd, 2024, change the filename to 2024-01-23-Agency-IVN-dataset.xlsx.   
 Open the production dataset.   
 Verify that the data you are adding matches the data structure and syntax of the production dataset. If not, notify the Value Integration Report (VIR) lead listed in the backlog. Note: some researchers use different names for the title of the same governance document, so make sure all data for a governance document uses the same title as cited in your research assignment.   
 Add the rows from the dataset to the production dataset.   
 Save the production dataset.   
 Update your research project task to indicate that you have updated the production dataset with your data.

# Conclusion/Call to Action

By following the IVN approach, Federal agencies and other stakeholders can leverage policymaking and planning resources, capabilities, and expertise to collaborate on results, while enhancing their capacity for evidence-based policymaking, strategic planning, portfolio management, and performance management. The IVN approach can also help Federal agencies and other stakeholders foster innovation and creativity, by creating opportunities for cross-disciplinary collaboration and knowledge exchange.

This SOP should provide Federal agencies and other stakeholders with a practical guide to creating an IVN and applying data from it to policymaking, portfolio management, and strategic planning, and we in the IVN team look forward to hearing about your experiences and insights as you implement this approach in your work.

# Appendix A: Tips and Tricks for IVN Data Entry and Management

IVN data is often entered using word-processing applications like Microsoft Word and spreadsheet applications like Microsoft Excel. Other platforms such as Salesforce generate reports in spreadsheet format. Considering the significant portion of IVN data entry and reporting using the Excel application, researchers have found the following shortcuts useful for entering and revising data more efficiently.

Note: References to proprietary software and technologies do not constitute an endorsement.

## How to paste text from source documents and find or replace line breaks, tab characters, bullet characters, and extra space in Word

You may want to export PDFs of source documents into a Word document to make it easier to cut and copy text into your worksheet. You may also want to create a text-only version of the entire source document and replace the tabs, bullets and extra spaces globally.

1. Copy a component from the source document. Open a blank Word document. Right-click to open the pop-up menu, and select Paste Text Only.
2. Click Ctrl-H to open the Replace window.

Graphical user interface, text, application, email

Description automatically generated

1. Select More | Special. Select the Paragraph Mark in Find What, and replace it with a single space. Select Tab Character and replace it with a single space. You can also copy a bullet from the text and replace it with a single space.
2. Replace two spaces with a single space and click Replace All. Keep selecting Replace All until the search returns no changes.

## How to find or replace a line break in Excel

To replace a line break with a space or any other separator, enter the line break character in the Find what field by pressing Ctrl + J. This shortcut is the ASCII control code for character 10 (line break, or line feed).

After pressing Ctrl + J, at first sight the Find what box will look empty, but upon a closer look you will notice a tiny flickering dot like in the screenshot below. Enter the replacement character in the Replace with box, e.g. a space character, and click Replace All.

Find and replace with wildcards

The use of wildcard characters in your search criteria can automate many find and replace tasks in .

Use the asterisk (\*) to find any string of characters. For example, sto\* finds "stone" and "store".

Use the question mark (?) to find any single character. For instance, t\*o finds "too" and "two".

For example, to get a list of names that begin with "re", use "re\*" for the search criteria. Also, please keep in mind that with the default options, Excel will search for the criteria anywhere in a cell. In our case, it would return all the cells that have "re" in any position. To prevent this from happening, click the Options button, and check the Match entire cell contents box. This will force Excel to return only the values beginning with "re" as shown in the below screenshot.

## How to find and replace wildcard characters in Excel

If you need to find actual asterisks or question marks in your Excel worksheet, type the tilde character (~) before them. For example, to find cells that contain asterisks, you would type ~\* in the Find what box. To find cells that contain question marks, use ~? as your search criteria.

## Shortcuts for find and replace in Excel

Ctrl+F - Excel Find shortcut that opens the Find tab of the Find & Replace

Ctrl+H - Excel Replace shortcut that opens the Replace tab of the Find & Replace

Ctrl+Shift+F4 - find the previous occurrence of the search value.

Shift+F4 - find the next occurrence of the search value.

Ctrl+J - find or replace a line break.

# Appendix B: Tips and Tricks for IVN Data Entry and Management Using Salesforce platform

NOTE: Refer to Figure 1 for an example of the hierarchical view of the data’s end state. The hierarchical view of the data may help inform the decision about which technical solution (database management system) the organization ultimately selects.

The technical specifications for collecting and managing the data that informs the IVN depend on the Agency’s information technology or information management environment. If an Agency does not have existing relational database or property graph database tools from which to choose, then consideration should be given to tools with which the Agency’s IVN Project team is familiar or to tools that leverage existing IVM databases in other agencies. Some source documents provide explicit alignments to other sources, e.g., performance plan measures usually align to specific strategic plan objectives. In this case, default to using the alignments in these sources.

A spreadsheet application provides sufficient functionality to record the alignments and perform the quality assurance steps outlined below. However, a relational database application provides more sophisticated analysis and reporting and is much less vulnerable to data loss.

Another technical or technology consideration includes the use of or add-on of a visualization tool to depict the IVN in a network diagram, which enables the visualization of the network via the connections (edges) between and among the source documents (nodes). Several business intelligence platforms can manage large datasets and perform more complex queries.

# Appendix C: IVN data sharing framework

An IVN data sharing framework for Federal agencies is a structured and systematic approach to manage the sharing of IVN data between various agencies of the Federal Government. Such a framework is necessary for several reasons. First, it enables Federal agencies to share IVN data in a secure, consistent, and efficient manner, protecting sensitive information from unauthorized access or disclosure. Secondly, it facilitates better decision-making by providing policymakers with a comprehensive and holistic view of various government programs and initiatives. Finally, a data sharing framework can help reduce duplication of effort and save Federal revenue by ensuring that government agencies are not collecting or storing redundant information.

There are several key components of a data sharing framework for Federal agencies. These include:

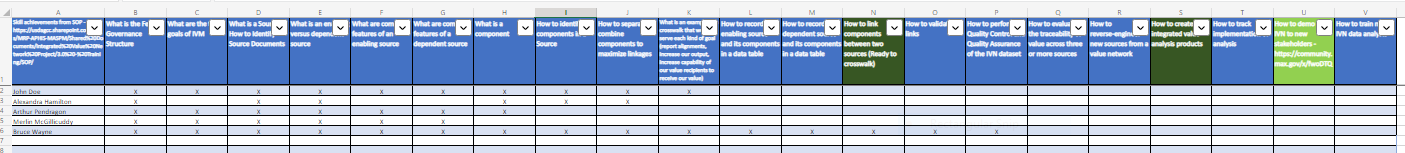
* Data Governance: The policies, procedures, and guidelines that define how to collect, store, share, and apply IVN data. It includes standards for data quality, security, privacy, and compliance with legal and regulatory requirements.
* Data Architecture: The design and structure of data systems, including data models, data dictionaries, and metadata. It provides a common understanding of the IVN data that is shared between agencies, enabling them to use and interpret it in a consistent and meaningful way.
* Data Access and Sharing: The processes and technologies that enable authorized users to access and share IVN data across Agency boundaries. This includes access controls, data sharing agreements, and secure data transfer mechanisms.
* Data Analytics: The tools and techniques used to analyze and interpret IVN data, enabling Federal agencies to derive insights and make informed decisions. This includes data visualization, machine learning, and predictive analytics.

In conclusion, an IVN data sharing framework for Federal agencies is essential for promoting collaboration and transparency among government entities. A data sharing framework provides a structured and secure approach to sharing data, enabling policymakers to make better decisions, and improving the efficiency of government programs and initiatives.

# Glossary and Data Dictionary

|  |  |
| --- | --- |
| Blockages (incl. missing crosswalks) | Based on blockages as defined in Agile product development; anything that stops or slows down the delivery of a product or acts as a hurdle for the product. |
| Code of Federal Regulations (CFR) | Regulations issued by executive branch agencies; the codification of the general and permanent rules published in the Federal Register by the departments and agencies of the Federal Government. |
| Connection | The directional transfer of information (policy) between two nodes (such as agencies, departments, and branches of government). |
| Dependent Source | Documents and their components that receive business value. |
| Dependent Component | A distinct deliverable, goal, objective, or directive within a source that “depends on” or receives value from an “enabling” component within a different source. |
| Dependent Source | The name of the source document that contains the related or “dependent’ component. A component of this source “depends” on an “enabling” component in another source to deliver its requirements. |
| Dependent Component URL | Uniform Resource Locator (URL) of the Dependent Component, if the source is available on the Internet; otherwise a local filepath or query to the component. Most components for a source will have the same URL. |
| Domain | Broad areas of interest to an organization. |
| Enabling Component | A requirement, goal, priority, or measure within a source that “enables” a “dependent” component within a different source to deliver its requirements. |
| Enabling Source | A source document that provides business value to a Dependent Source as defined in a crosswalk of those two sources; the source that contains components that, if they achieve their end state, would cause a component of a Dependent Source to move closer to its end state. |
| Federal Governance Structure (FGS) | The network of networks of policies, laws, directives, plans, strategies, regulations, operations, programs, outcomes, goals, and objectives (Please refer to Figure 1.) |
| IVN Business Line | The office or organization that defines requirements for IVN products and leads the implementation of those products. |
| Linkage Mandate | The legal or policy mandating a linkage between two sources. |
| Maps to (Enabling > Dependent) | The specific Enabling Source and Dependent Source of a crosswalk. |
| Network | The system linking multiple nodes and connections, which can – and often does - include multiple jurisdictions and levels of government. |
| Node | An actor or decision maker: the government, an Agency, a politician, or other authority. |
| Product | Analysis that supports policymaking or governance decisions based on IVN research and mapping. |
| Product Customer | The contact who requests the product. |
| United States Code (USC) | The United States Code is the codification by subject matter of the general and permanent laws of the United States. It consists of 53 titles, and it is published by the Office of the Law Revision Counsel of the U.S. House of Representatives. The U.S. Code does not include regulations issued by Executive Branch agencies, decisions of the Federal courts, treaties, or laws enacted by state or local governments. |
| Value | The net effect or result of the importance, worth, or usefulness of measurable change. This includes monetary worth, quality of life, or increased information exchange (knowledge), and proof of compliance. Delivering the scope of some governing source node delivers some objectively measurable feature (value) of the scope of another governance node. |

# Skills Matrix



This is an example skills matrix tracker in Excel used to develop the skills needed by IVN analysts. The skills tracker generally follows the outline of the SOP, but agencies and IVN teams should feel free to adjust or expand the tracker as necessary for their business environments.

# Glossary

Blockages (incl. missing crosswalks) - Based on blockages as defined in Agile product development; anything that stops or slows down the delivery of a product or acts as a hurdle for the product.

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Connection - The directional transfer of information (policy) between two nodes (such as agencies, departments, and branches of government).

Dependent Source - Documents and their components that receive business value.

Dependent Component - A distinct deliverable, goal, objective, or directive within a source that “depends on” or receives value from an “enabling” component within a different source.

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Dependent Source

The source document that requires additional authority to have power. The name of the Source document that contains the related or “dependent” component. Reports refer to this as the "Dependent Source", because a component of this source "depends" on an “enabling” component in another source to deliver its requirements., 57

Dependent Component URL

Uniform Resource Locator (URL) of the Dependent Component, if the component is available on the Internet, 57

Enabling Source

Enabling Source facilitates or supports the objective of the Dependent Source. The name of the Source document. "Enabling Source" means a component of this source "enables" a "dependent" component in a different, "dependent" source document to deliver its requirements., 56

Enabling Component URL

Uniform Resource Locator (URL) of the Enabling Component, if the component is available on the Internet; otherwise a local filepath or query to the component, 57

Mandated Linkage

Policy or code that specifies the linkage be made between an Enabling Source and a Dependent Source. The Dependent Source is the recipient of the benefit that the Enabling Source provides, but it's also the recipient of the driver from the Enabling Source. The "vehicle" of the Enabling Source is not required but calls to the Dependent Source., 57

# References

1. <https://www.whitehouse.gov/omb/information-for-agencies> [↑](#footnote-ref-2)
2. <https://www.ecfr.gov> [↑](#footnote-ref-3)
3. [↑](#footnote-ref-4)
4. [↑](#footnote-ref-5)