

**FINAL  
BUSINESS CASE MODEL  
ACQUISITION GUIDEBOOK**

**for the**

**DOD CALS IDE PROJECT**

**An MVP Joint Venture**

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## **PREFACE**

This guidebook provides a program manager with the methodology and tools to prepare an Integrated Data Environment (IDE) business case. The focus of this guidebook is to lay the foundation for the program manager to prepare IDE Business Cases in a practical and manageable manner. This guidebook provides an overall view of the Business Process Reengineering (BPR) methodology, introduces the program manager to tools that are available to ease the preparation of IDE Business Cases, and provides the framework for IDE Business Case development. Because, by definition, the IDE Business Case deals solely with technology-related initiatives and alternatives, particular attention is given to documenting the program's geo-technical baseline, and the impact of initiatives and alternatives on that baseline.

The purpose of the IDE Business Case is to provide the decision maker with the comparative analysis for making investments in the program's geo-technical configuration. The geo-technical baseline can be defined as the program's technical foundation of the existing technical infrastructure, location of the infrastructure, data exchange occurring within the infrastructure, plus any approved changes to the infrastructure. Therefore, the IDE Business Case is a subset of a full program business case undertaken as part of a BPR project. The investments made in the program's geo-technical configuration must support the activities of the program by making the activities more reliable, cost-effective, and timely.

This guidebook was based upon the Department of Defense (DoD) Enterprise Model. The activities, processes, and data described within the DoD Enterprise Model not only serve as a foundation of understanding for DoD and contractor personnel, but also span all levels of activity and data for the DoD. Because the DoD Enterprise Model is the template for integrating improvements and operations across DoD, it becomes an integral tool for developing IDE Business Case methodology. A complete discussion of the DoD Enterprise Model is included in Subsection 4.2.1 of this guidebook.

## 1.0 INTRODUCTION

*“It must be remembered that there is nothing more difficult to plan, more doubtful for success, nor more dangerous to manage, than the creation of a new system. For the initiator has the enmity of all who would profit by the preservation of the old institutions, and merely lukewarm defenders in those who would gain by the new ones.” - Machiavelli*

The world has changed drastically in the last few years. As the Cold War has come to an end, the American public has turned from blaming the problems of the world on communism to blaming Congress. Faced with the soaring national budget deficit, the American public is demanding that our Government, “Shape-up or ship-out!” Never was this so apparent than in the ouster of the Democratic-led Congress of 1994. Under special scrutiny is the Department of Defense, often portrayed in times of peace by the news media as the “multi-billion dollar bureaucratic bottleneck.” The American public has said “no more” to colossal weapon-system cost over-runs. Faced with a shrinking budget, DoD has been forced to “re-think” the way it “does business.” In the face of this challenge, DoD has sought to improve itself by:

- Realigning processes with changed missions;
- Improving customer service;
- Lowering cost of providing services;
- Moving to a fee-for-service mode of operation;
- Adapting to changing technology and information systems; and
- Adjusting processes in response to reduced budgets.<sup>1</sup>

In short, DoD has begun to think of itself as a business, rather than an economy. DoD’s mission has been modified from “provide for the common defense” to “provide for the common defense in an efficient, cost-effective manner.” The Department has been downsized from its late 1980’s posture, yet maintains technological superiority through a combination of better intelligence, sophisticated command and control, smart weapons, highly motivated and trained personnel, and the application of information management to all DoD activities. Global end-to-end information connectivity among U.S. and allied forces is a critical mission capability and force multiplier for worldwide readiness, mobility, responsiveness, and operations. To achieve this end-to-end information connectivity, DoD has embraced the Integrated Data Environment (IDE) concept. **DoD’s vision as to how it will do business in the future**, implementing the IDE concept, is as follows:

Joint interoperability and information integration have been achieved on the battlefield resulting in significantly improved joint service and multinational operations. The military industrial base has been fully integrated with the commercial base, so the Department can rapidly obtain and use standard commercial products and services at lower cost. Acquisition has been

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<sup>1</sup> From the *Framework for Managing Process Improvement*, DoD, 1994.

streamlined through the application of Continuous Acquisition and Life-Cycle Support (CALs) and Electronic Commerce/Electronic Data Interchange (EC/EDI) enabling technologies. The sustaining base has been integrated seamlessly with the theater to deliver the right mix of assets and capabilities when and where they are needed for the Combatant Commander to achieve the assigned mission.

All Department functions and organizations have been reengineered, improved and integrated, from an enterprise wide perspective, to achieve streamlined and significantly more effective operations. Modernized information systems have been implemented to support these re-engineered functional processes. Throughout the Department, information is viewed as a strategic asset used to continually increase the effectiveness of military operations and support activities through improved management processes, technology exploitation, economies and greater responsiveness.

To achieve this vision, many interrelated programs, directives, initiatives, etc., are in place or being developed by DoD. They include the following:

- Corporate Information Management (CIM) Initiative;
- Management Control Program;
- Total Quality Management (Leadership);
- Functional Process Improvement Program (FPIP);
- Life-Cycle Management of Information Systems (LCMIS);
- Planning, Programming, Budgeting System (PPBS); and
- Continuous Acquisition and Life-Cycle Support (CALs).

In essence, the DoD is reengineering its business processes. BPR is a radical improvement approach that critically examines, rethinks, and redesigns mission product and service processes. It achieves dramatic mission performance gains from multiple customer and stakeholder perspectives. It is a key part of a process management approach for optimal performance that continually evaluates, adjusts, or removes processes.<sup>2</sup> DoD's approach for conducting business-process reengineering is to:

- Understand the business and functional requirements for the process under study with respect to mission.
- Assess the current status of all process elements (process, people, and technology) with respect to meeting requirements and enabling change.
- Establish the baseline (AS-IS models) with respect to process, data, organization, and technology.
- Identify and quantify stakeholder interests in the process, establish new standards of performance, and design measures and key indicators.

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<sup>2</sup> From the *Electronic College of Process Innovation*.

- Conduct an improvement analysis program to identify potential improvement initiatives that will raise process performance to the desired level.
- Design a change management program that will address organizational and technical issues to align improvements in these elements with potential or planned process improvement.
- Develop a process vision and construct TO-BE models of process, data, organization, and technology based on the vision and improvement initiatives. Identify alternative means of achieving the desired future state.
- Perform economic and risk analysis on all alternatives, and select and document a recommended course of action.
- Perform enterprise engineering to construct an organizational and technical platform suitable for the improved, redesigned, or re-engineered process consistent with the DoD Enterprise Model and established standards.
- Test (prototype or pilot), implement, deploy, operate, and maintain the improved process and supporting systems.
- Evaluate progress, update baseline models, and prepare for the next cycle of improvements.<sup>3</sup>

To achieve the DoD vision, all elements of DoD including Weapon System Program Managers, are being challenged to justify the expenditure of funds to ensure that investments move DoD toward the realization of the vision. As cited by our Statement of Work (SOW), “Program Managers must be enabled with acceptable methodologies and guidance for assessing the benefits of an integrated data environment, and providing economic arguments necessary for making investments supporting the storage, manipulation and transmission of defense system technical information in digital formats.” The accepted methodology and guidance for enabling program managers to assess the benefits of the IDE is an IDE business case.

A business case, in its broadest definition, is “a report presenting business information to the decision maker.” More specifically, a business case may be defined as

**A business decision document that identifies alternatives and presents economical and technical arguments for implementing alternatives to achieve the stated business objective/imperatives(s). It includes functional process descriptions, technical architecture descriptions, cost projections, action plans, measures of performance, and risk assessment for each alternative being considered.**

An IDE Business Case is a business case prepared by Program Management Office (PMO) Personnel in response to DoD’s strategic objective for the implementation of the IDE environment. Its context is the IDE and the program’s life-cycle, and its perspective is that of the program manager. The purpose of an IDE Business Case is to provide Program Managers with a clear and consistent method of determining the costs and

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<sup>3</sup> *Framework for Managing Process Improvement*, DoD, 1994.

benefits associated with the creation, use, storage, manipulation, and transmission of defense technical data in digital format.

A daunting amount of information is available to the program manager in achieving this goal. Wading through this information in order to siphon that which may be helpful to the program manager in justifying fund expenditures, in the face of budgetary deadlines, however, can be daunting.

This guidebook provides a program manager with the methodology and tools to prepare an Integrated Data Environment (IDE) business case. The focus of this guidebook is to lay the foundation for the program manager to prepare IDE Business Cases in a practical and manageable manner. This guidebook provides an overall view of the BPR methodology, introduces the program manager to tools that are available to ease the preparation of IDE Business Cases, and provides the framework for IDE Business Case development. Because, by definition, the IDE Business Case deals solely with technology-related initiatives and alternatives, particular attention is given to documenting the program's geo-technical baseline, and the impact of initiatives and alternatives on that baseline.

## 2.0 A RETROSPECT<sup>4</sup>

*“There is nothing permanent except change.” - Heraditus*

The Department of Defense (DoD) and its industrial supply base constitute the largest single enterprise in the world. This enterprise consumes over \$250 billion per year. Its purpose is to "provide for the national defense." As is the case with most enterprises in this economy, the DoD Enterprise is undergoing radical change. It is redefining its objectives, given changing "market" conditions, it is changing the way it does "business", it is reorganizing, it is cutting costs, and it is attempting to become more agile and adaptive.

At the heart of DoD repositioning is the central theme of "enterprise integration." And, at the heart of DoD's enterprise integration strategy is the Defense Information Infrastructure (DII). DoD has committed to achieving enterprise integration by radically changing and upgrading its information infrastructure. This job has been assigned to the Director of Defense Information (DDI) and the Defense Information Services Agency (DISA).

As part of this program for reengineering the DII, the DDI manages the Corporate Information Management (CIM) initiative. CIM is focused specifically on improving the processes used by the DoD enterprise to do its work. A critical element of the CIM initiative is Functional Process Improvement (FPI), which is intended to encourage and manage changes in DoD business processes. FPI is described in DoD 8020.1-M.

Corporate Information Management (CIM) is a revolutionary program aimed at changing the way people work in the DoD. CIM is designed to help the DoD operate more along the lines of civilian businesses with an eye toward cost optimization and performance excellence. Properly applied, CIM is used to find and eliminate the duplication of functions and the redundancy of DoD business processes and information systems. CIM's approach focuses on business (or functional) process improvement techniques and requires the development of a business case before process changes and new information systems can be approved. This procedure represents a totally new way of operating for the DoD. DoD managers are responsible for implementing the CIM initiative. As part of their implementation of the CIM initiative, managers are required to prepare business cases to justify investment in systems and expenditure of funds. The goal of this guidebook is to help the program manager prepare IDE Business Cases.

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<sup>4</sup> Adapted from the *CIM Process Improvement Methodology for DoD Functional Managers*, DoD.

### 3.0 GETTING STARTED

*“Nothing great was ever achieved without enthusiasm.” - Ralph Waldo Emerson*

Business Process Reengineering (BPR) is the radical transformation of business processes to achieve orders of magnitude improvement, eliminating non-value added activities, thus reducing cost and manpower. It is a temptation for program managers to believe that their status and power are directly related to how many dollars and employees are under their control. It is also human nature to be comfortable with the status quo, for humans tend to fear the unknown. Combine the aforementioned, and there exists a tremendous impediment to change. If this is the case, then why would a program manager want to implement a BPR program that may reduce either budget dollars or employees or both, thus reducing their status and power without positive assurance that the changes, once implemented, will be successful? The success and resulting cost savings do not usually occur during the program manager’s tenure.

For managers to embrace business cases and the BPR doctrine, they must realize that they are a vital management tool to be used to achieve customers’ desired outcomes in the face of the inevitable employee and budgetary reductions as a result of Government downsizing. The single most important critical success factor for successful BPR is management commitment. Without management commitment, managers will be “going through the motions” when they prepare business cases for their respective programs. A problem is, therefore, how to inject program managers with the enthusiasm necessary to believe that the business case is a tool for change management. (*Change management is the balanced management of the resources [human and technical] associated with the change initiative. It is about people leading the change effort and those who are expected to implement the new strategies. It is concerned with the organizational culture and context in which change can occur, and the management of the emotional connections essential for a successful transformation. A number of strategies involved in change management include education, training, and communications.*<sup>5</sup>) The answer to the problem is to provide the manager with clear methodology to implement change that will benefit the manager and the program; that methodology is business process reengineering.

The program manager is tasked with performing BPR to move the program toward the IDE vision. Yet to implement constructive change, a program manager may need to make infrastructure investments (tools, equipment, training, etc.) in the program. DoD requires that the program manager justify these infrastructure improvements, and has stated that the IDE Business Case be the medium to justify the program’s investments. It is therefore critical for the program manager to start off on the right foot. The program manager will be faced with preparing a business case that will justify the expenditure of funds necessary to adopt feasible IDE improvements. Poorly prepared, the business case will not achieve its intended function, and may jeopardize the program manager’s ability to seek funding for those initiatives that will achieve improvement.

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<sup>5</sup> From the *Electronic College of Process Innovation*.

The program manager must begin the business case process by assembling a team of personnel eager and ready to improve the program. A critical factor for the success of the business case will be the business case preparation team. The team must understand the purpose of the business case, DoD's vision for the IDE, and BPR methodology. The team must synthesize these ideas to form the individual program's IDE objectives. Further, the team will act as the program manager's agents by performing many of the activities required to prepare the business case. Although no formula exists for team selection, the program manager should select personnel who are competent in technical and financial fields, and who possess strong interpersonal skills. Once the team has been selected, the program manager must provide the team with effective executive leadership that will allow the team to

- Link process improvement objectives to strategic and business plans, and
- Provide strong customer focus for improvement efforts.

Once the team has been selected, it is time to begin the BPR effort. As outlined in the *Business Process Reengineering Process Model, Version 3*, published by the Office of the Deputy Assistant Secretary of Defense (Information Management), the next step is to perform strategic planning. The program manager and the team will develop the vision, goals, performance targets, and strategies necessary to move the program toward DoD's IDE vision. Program managers preparing business cases should review the *Business Process Reengineering Process Model, Version 3* to gain an understanding of the BPR concept. It should be noted that a program business case is tied to activities A41 - Perform Business Improvement Analysis, and A42-Develop Milestone Plan and Functional Economic Analysis (FEA). This report focuses upon those two activities that, when viewed from a program manager's perspective, make up the activities to prepare a business case. The context for activities A41 and A42 is a BPR effort, while the focus of this guidebook is the IDE as part of an overall BPR effort.

For the weapon system program manager, there is no set recipe for developing an IDE Business Case. If there were, then the program manager could merely follow the prescribed step-by-step procedure. At this point and at the current experience level with process improvement, we will only provide guidance for process improvement and guidance for preparing IDE Business Cases. To this end, an IDEF0 approach for preparation of IDE Business Cases is provided in the following section.

#### 4.0 THE “PREPARE IDE BUSINESS CASE” IDEF0 MODEL

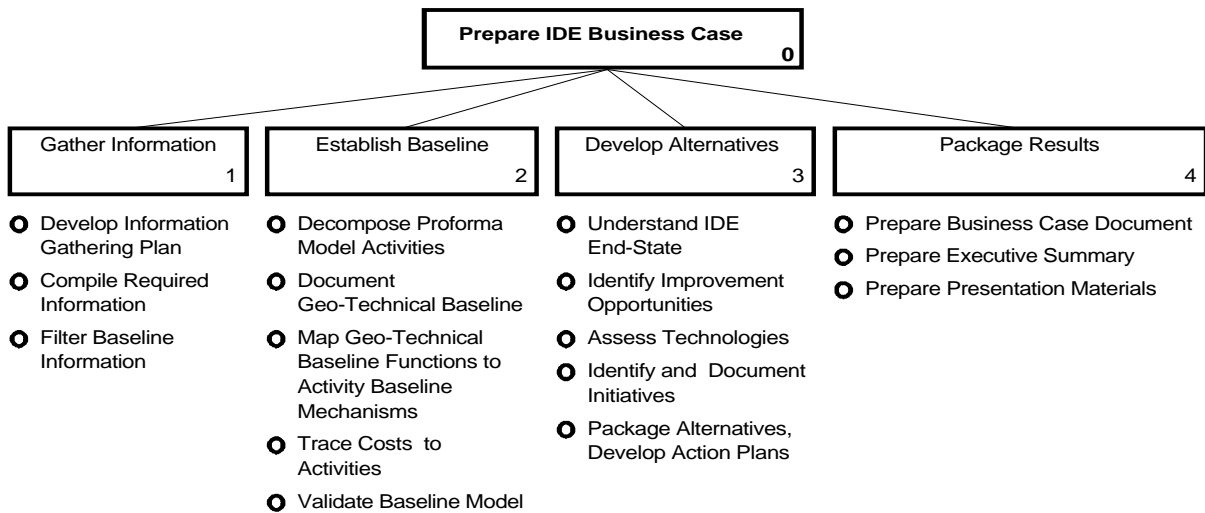
*“Never tell people how to do things. Tell them what to do and they will surprise you with their ingenuity.” - Gen. George Patton*

The approach chosen for aiding program managers in preparing IDE Business Cases is the IDEF0 model. An IDEF0 model can be defined as:

A graphical representation of a business process that exhibits the activities that make up the business process to any desired level of detail. An activity model reveals the interactions between activities in terms of inputs and outputs while showing the controls placed on each activity and the types of resources assigned to each activity.

The business process being graphically represented by the model is “Prepare IDE Business Case,” and can be defined as “the process of developing a business decision document that will identify new methods of performing the individual program’s business activities implementing IDE strategies and concepts.” The context of the model is the IDE and the program’s life-cycle. The perspective of the model is that of the program manager.

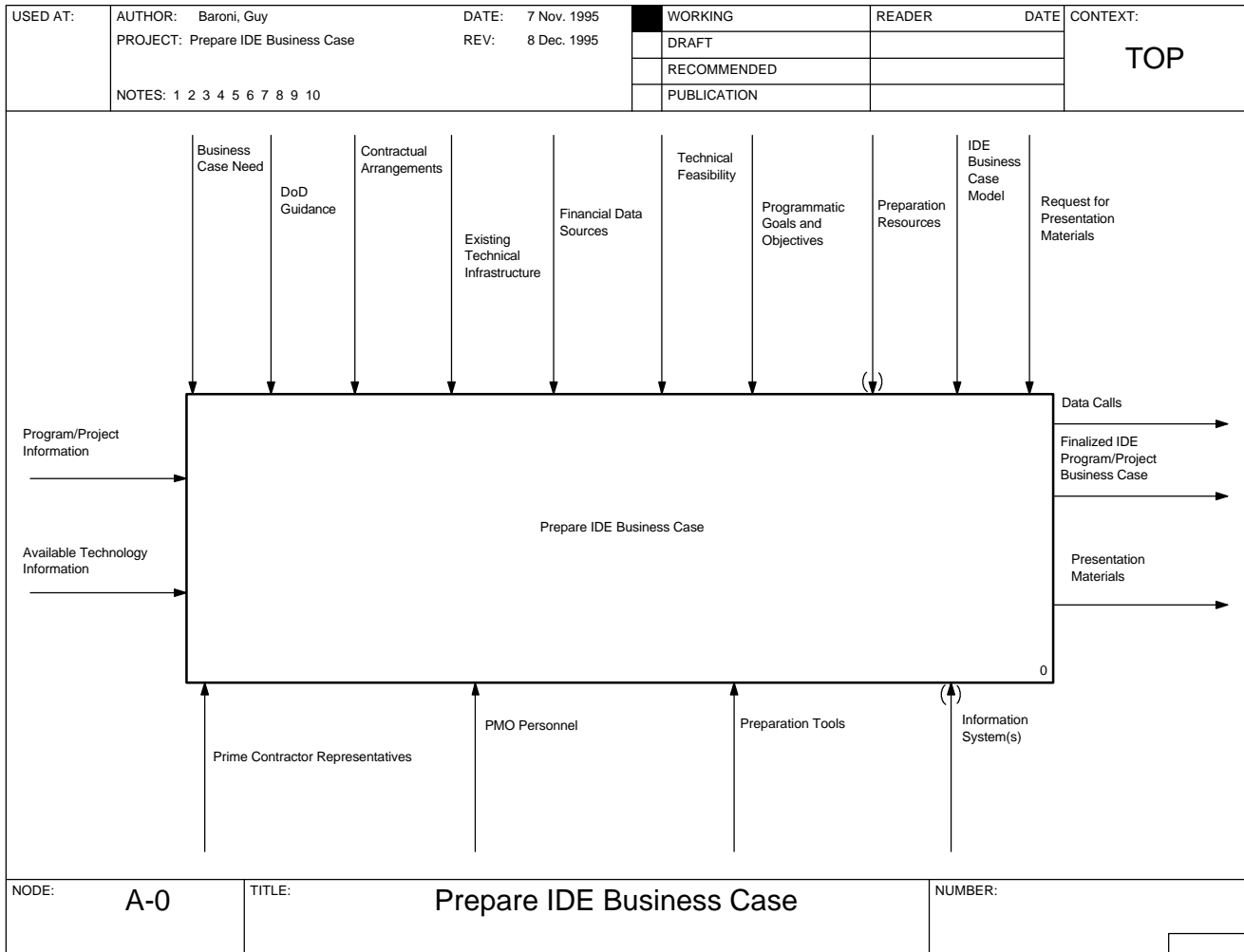
As illustrated by the model, four major activities are associated with preparing an IDE Business Case: Gather Information; Establish Baseline; Develop Alternatives; and Package Results. Each of these activities is decomposed to another level of activities in the model. A node tree of the model is portrayed in Figure 4.0-1 below:



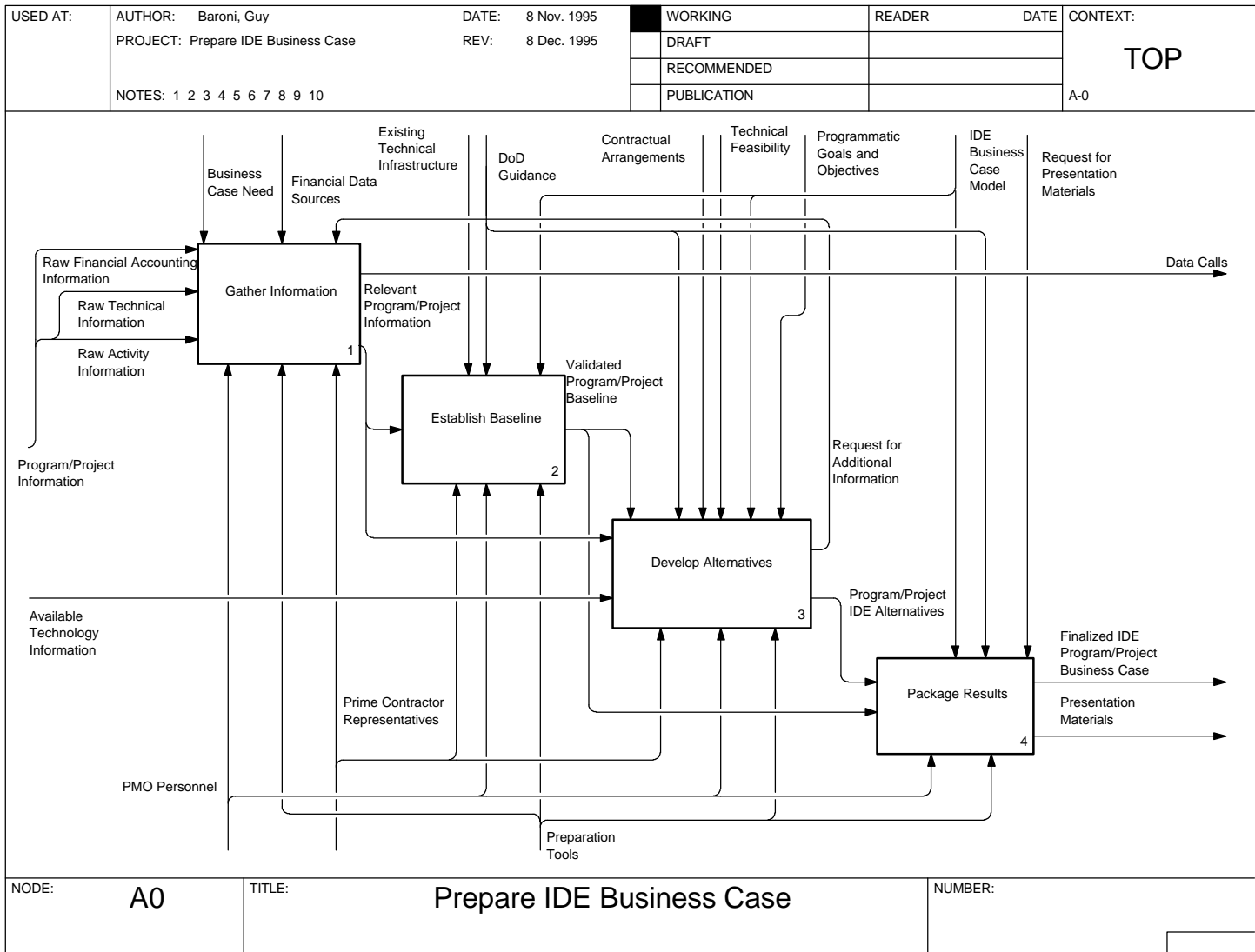
**Figure 4.0-1 Prepare IDE Business Case**

The model is pictorially represented within the following pages. An explanation of the activities required to prepare an IDE Business Case is presented in the following

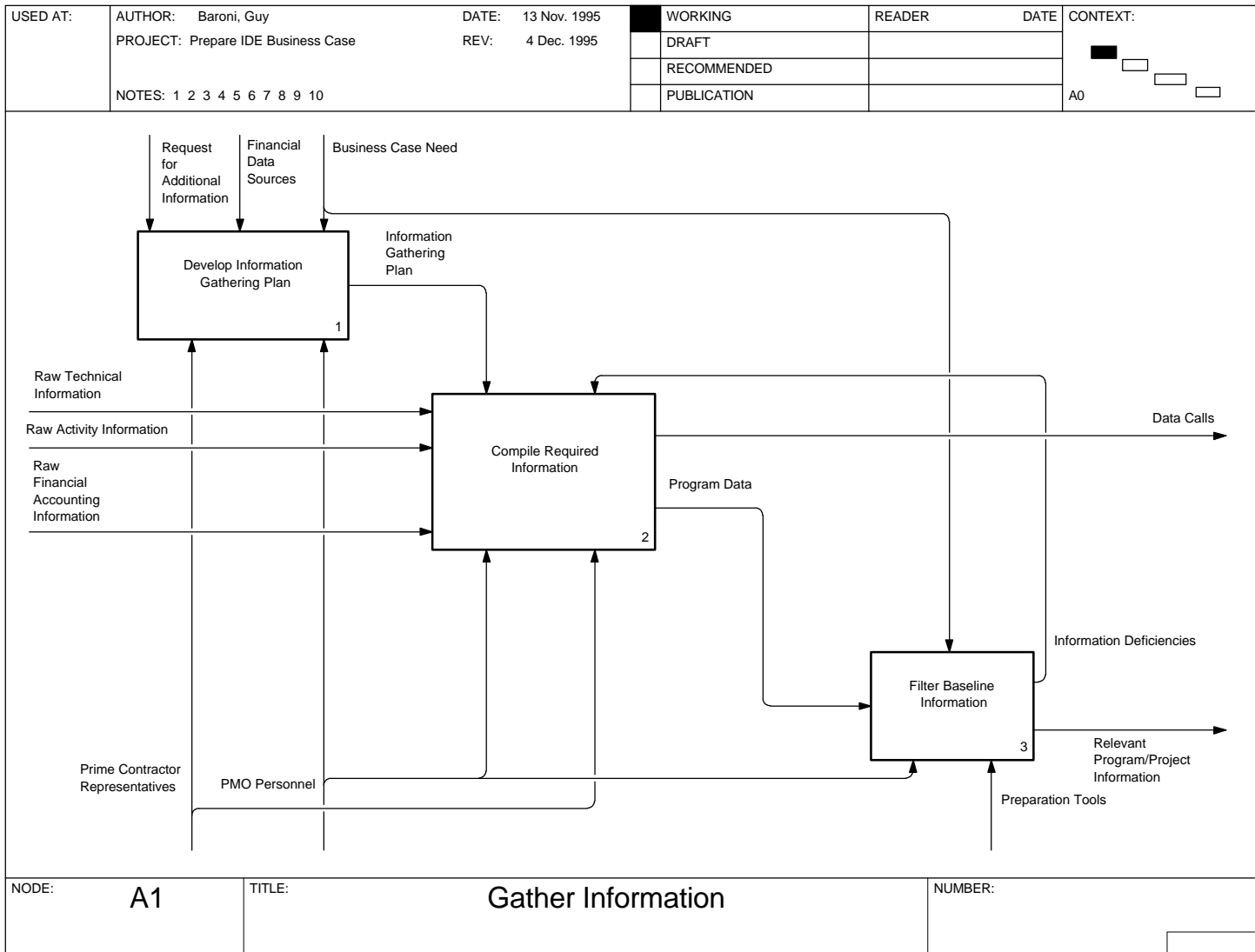
subsections. A table containing definitions of each of the activities is provided in Appendix A. Arrow definitions are provided in Appendix B.



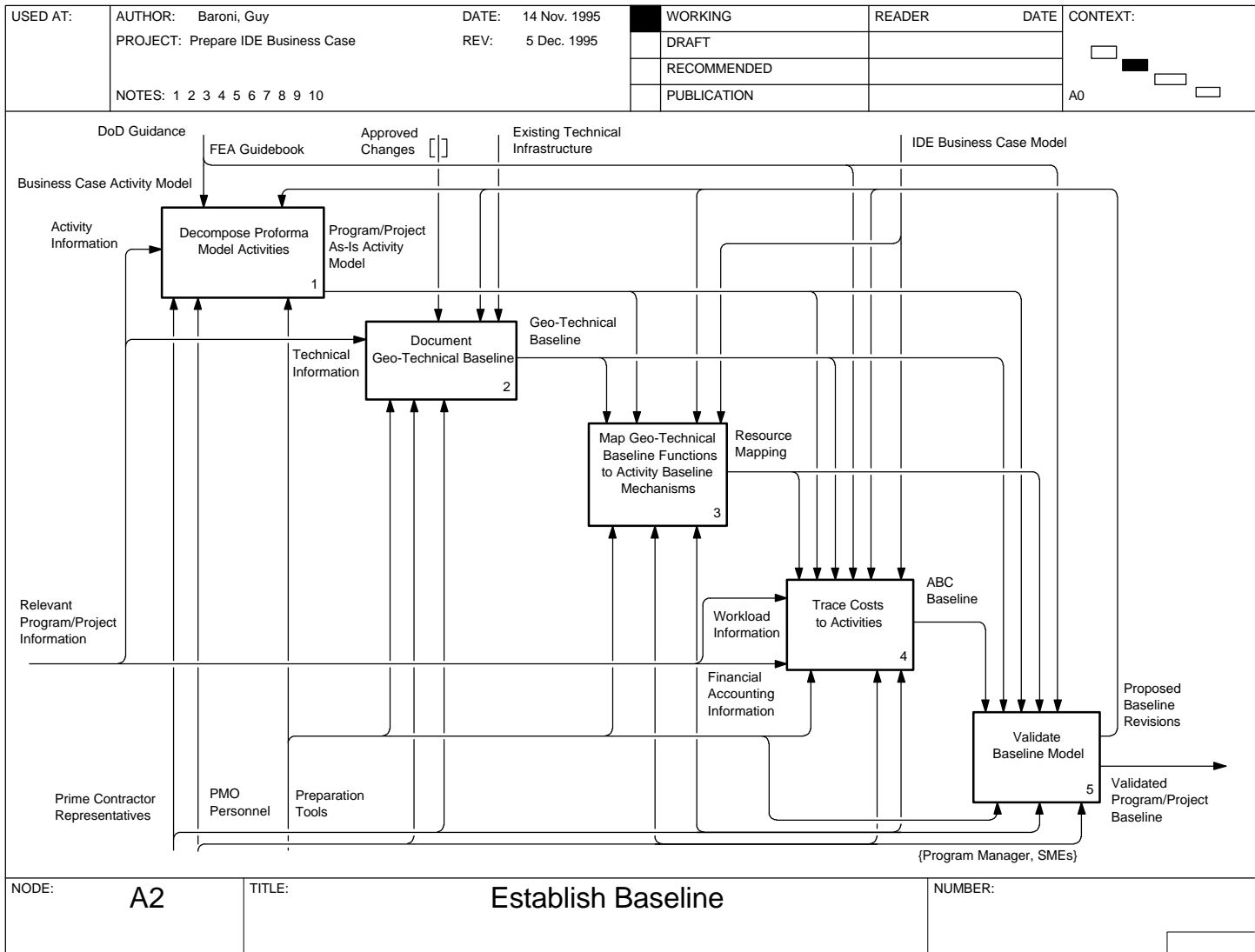
**Figure 4.0-2 Prepare IDE Business Case (A0)**



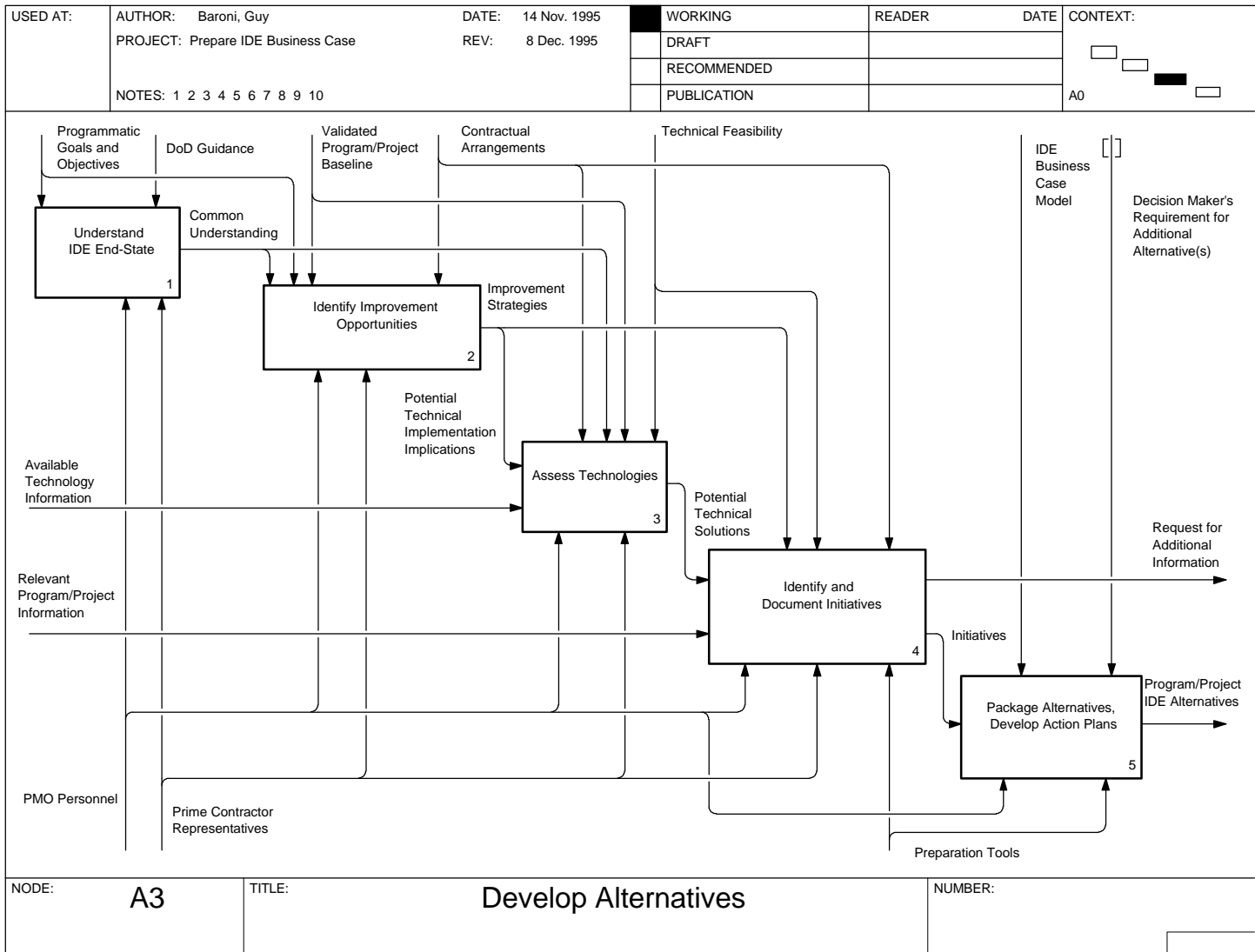
**Figure 4.0-3 Prepare IDE Business Case (A0)**



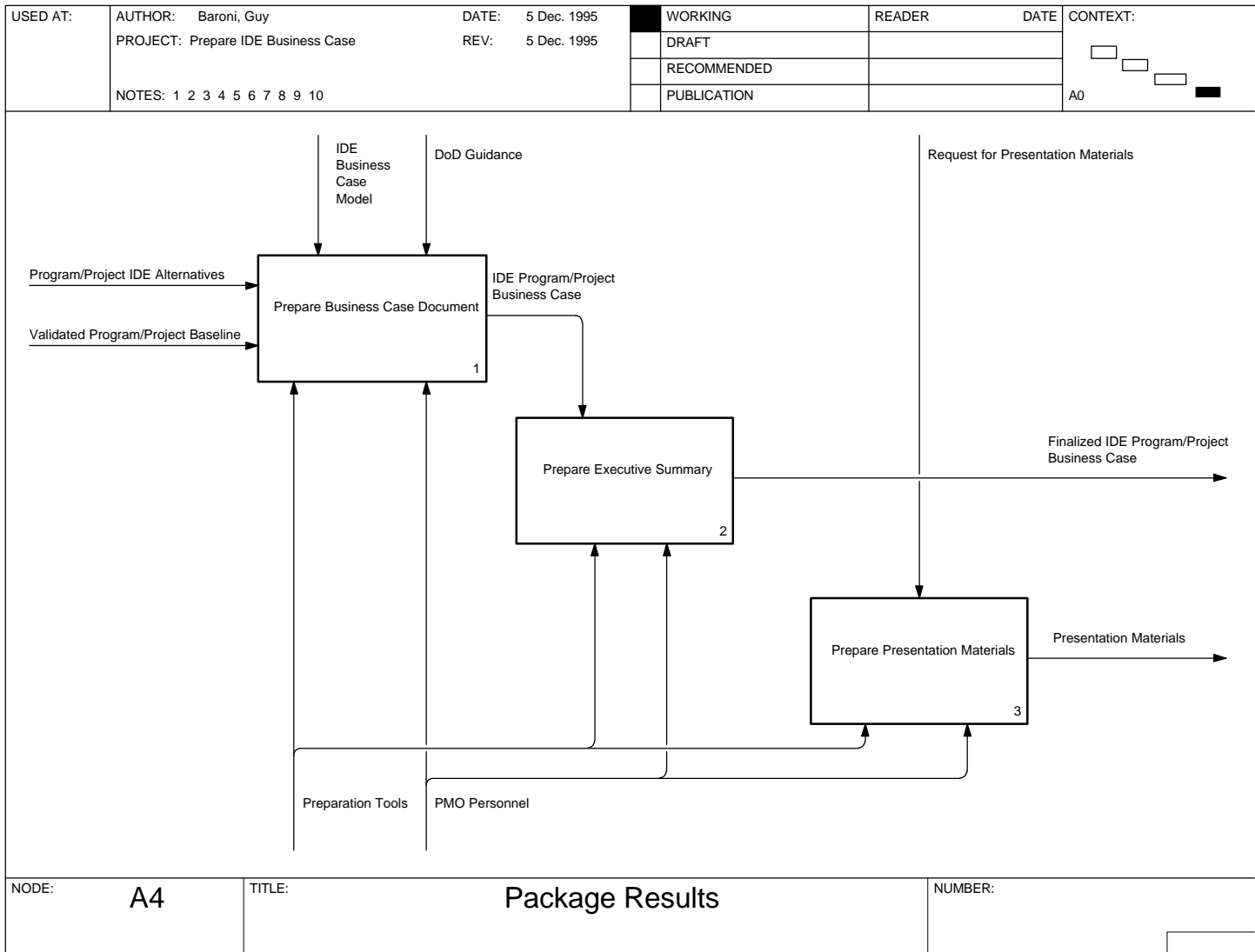
**Figure 4.0-4 Gather Information (A1)**



**Figure 4.0-5 Establish Baseline (A2)**



**Figure 4.0-6 Develop Alternatives (A3)**



**Figure 4.0-7 Package Results (A4)**

## **4.1 Gather Information (A1)**

*“The beginning is the most important part of the work.” - Plato*

The first major activity in preparing an IDE Business Case is to gather information. The activity “Gather Information” (A1) may be defined as “the process of accumulating the information necessary to prepare an IDE Business Case.” As shown by model A0, the output of the activity “Gather Information” is relevant program/project information that will be used to Establish the Baseline (A2) and to Develop Alternatives (A3). PMO personnel and prime contractor representatives will use preparation tools to perform this activity. This activity may be further decomposed into three subactivities: Develop Information Gathering Plan (A11); Compile Required Information (A12); and Filter Baseline Information (A13).

### **4.1.1 Develop Information Gathering Plan (A11)**

*“Failure to prepare is preparing to fail.” - John Wooden, Basketball Coach*

The program manager and the BPR team, as well as prime contractor personnel if required, will work together to develop an information gathering plan. This plan should include a plan of actions and milestones for obtaining required relevant information. As shown by the model, the business case need, as well as financial data sources, will dictate the type of information required and will control the development of the plan. Moreover, the plan of actions and milestones may be updated based upon the need for additional information not identified or received in the original plan.

### **4.1.2 Compile Required Information (A12)**

*“He who chooses the beginning of the road chooses the place it leads to. It is the means that determines the end.” - Harry Emerson Fosdick*

The “Compile Required Information Activity” (A12) is the process of assembling the required information to prepare a business case, issuing data calls for data to those components that maintain the information, receiving information responses from those components, and cataloging and categorizing the received information. Raw technical, activity, and financial accounting information are the inputs to this activity. The raw technical information includes basic unfiltered features and uses of the current hardware and software systems that will be recorded with the aid of the geo-technical baseline tool. Raw activity information is the unfiltered information about actions that occur in support of the program/project, including information pertaining to what the action is, why the action is performed, by whom the action is performed, how often the action is performed, and at what location the action is performed. In essence, the program manager is attempting to document the activities performed in support of the program/project so that an IDEF0 activity model for the particular program/project may be derived from the DoD Enterprise Model. Costs may then be attached to the activities. Identification and

elimination of activities that do not add value to the organization (non-value added activities) will lead to immediate cost savings for the program. The raw financial data are the unfiltered pecuniary information related to the specific program/project for which the business case is being prepared. The raw financial data may be historic data or budgetary data.

As shown by the model, PMO personnel as well as prime contractor representatives, if required, will compile the required raw data to prepare the business case. The output of the activity is an accumulation of program data required to prepare the baseline. Another output may be the issuance of data calls for additional information. Data calls are the formal requests for additional information that are transmitted during compilation of the needed information and performed after the information sources are identified.

#### **4.1.3 Filter Baseline Information (A13)**

*“When you have eliminated the impossible, that which remains, however improbable, must be the truth.” - Sir Arthur Conan Doyle*

After the program/project data have been compiled, the next step is to filter the compiled information to that information pertinent to develop the baseline for the program. Activity A13, “Filter Baseline Information,” is the process of reviewing the gathered material for reasonableness, completeness, accuracy, and materiality, and removing any extraneous information that is not required to produce the program/project baseline.

As shown by the model, PMO personnel will use preparation tools, such as TurboBPR, to produce relevant program/project information from the input program data. The need of the business case will aid in determining what information is important to the development of the business case. During this activity, PMO personnel will determine whether any deficiencies with the compiled information exist and will gather the necessary additional information so that the baseline may be established.

The filter baseline information activity is an iterative process. As PMO personnel review the compiled information, deficiencies in the compiled information should become evident. Additional calls for data will need to be made, additional data will be gathered, and thus the filtering process begins again. It is important to note that the “Gather Information” activity is a discovery process and may not be completed until the conclusion of specific reengineering effort for which the business case is being prepared.

#### **4.2 Establish Baseline (A2)**

*“The successful man is the one who finds out what is the matter with his business before his competitors do.” - Aristotle Onassis*

It would be impossible to determine the success or failure of a business process reengineering effort unless a starting point can initially be determined. Only by

understanding where the program is today, will the program manager be able to lead the program to where it needs to be tomorrow; it is not enough to make “good time” unless you know where you are. The same adage holds true with program BPR efforts, and that is the purpose of establishing a baseline. A baseline may be defined as “*a standard for comparisons. A baseline is a reference position for measuring progress in process improvement. The baseline is usually used to differentiate between a current and a future representation.*”<sup>6</sup> The current representation refers to the current business state, as well as any approved changes to the current business state.

Establishing the baseline consists of five sub-activities:

- Decompose Proforma Model Activities (A21);
- Document Geo-Technical Baseline (A22);
- Map Geo-Technical Baseline Functions To Activity Baseline Mechanisms (A23);
- Trace Costs To Activities (A24); and
- Validate Baseline Model (A25).

Once the baseline is established, the program manager will be able to determine what activities the business performs in support of the program, who and/or what performs the activities and where they are performed, and how much it costs to perform each activity in support of the program. From this “snapshot” of the current business state, improvement opportunities may be identified and performance measures determined. This “snapshot” describes the program’s current business processes.

Business processes define the transactions that take place among activities performed by various elements in a business's environment. This environment comprises elements of the business itself, existing and potential customers, and existing and potential suppliers. Because the majority of business transactions occur within the context of some process or other, the majority of a business's cost can be traced to its processes. It is possible to also trace product quality, time, and quality of work life directly to business transactions and, therefore, to business activities and, ultimately, to business processes. To objectively re-engineer business processes, business processes should be modeled to identify business activities, the mechanisms to perform those activities and trace costs to the activities, and mechanisms. Using this approach, a snapshot (model) of the business can be validated.<sup>7</sup>

#### **4.2.1 Decompose Proforma Model Activities (2.1)**

*“Even if you are on the right track, you’ll get run over if you just sit there.”*

**- Will Rogers**

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<sup>6</sup> From the *Electronic College of Process Innovation*.

<sup>7</sup> From *CIM Process Improvement Methodology for DoD Functional Managers*, D. Appleton, Publisher.

There are numerous approaches to business process change. The most successful of those approaches, such as the Deming approach of statistical process control, are based on the premise that a process cannot be improved until it is brought under control. To bring a process under control requires, first, that it be articulated to a level of detail where it can be measured.<sup>8</sup> This level of detail can be described by an IDEF0 Activity Model.

DoD has developed an IDEF0 Model that represents the Department's major activities. This model, called "The DoD Enterprise Model," has a context to "provide for the common defense." The activities, data, and core processes of DoD are described in the DoD Enterprise Model so there can be a shared understanding between leaders, managers, and workers of what is being done, how well it is being performed, and which elements should be changed. Conceptually, the DoD Enterprise Model spans all levels of activity and data in the Department. Managers will extend the strategic view of the model and tailor it for use by their organizational element. Thus, the DoD Enterprise Model becomes the template to integrate improvements and operations across the entire Department.<sup>9</sup>

There are four major activities identified in the DoD Enterprise Model that "provide for the common defense":

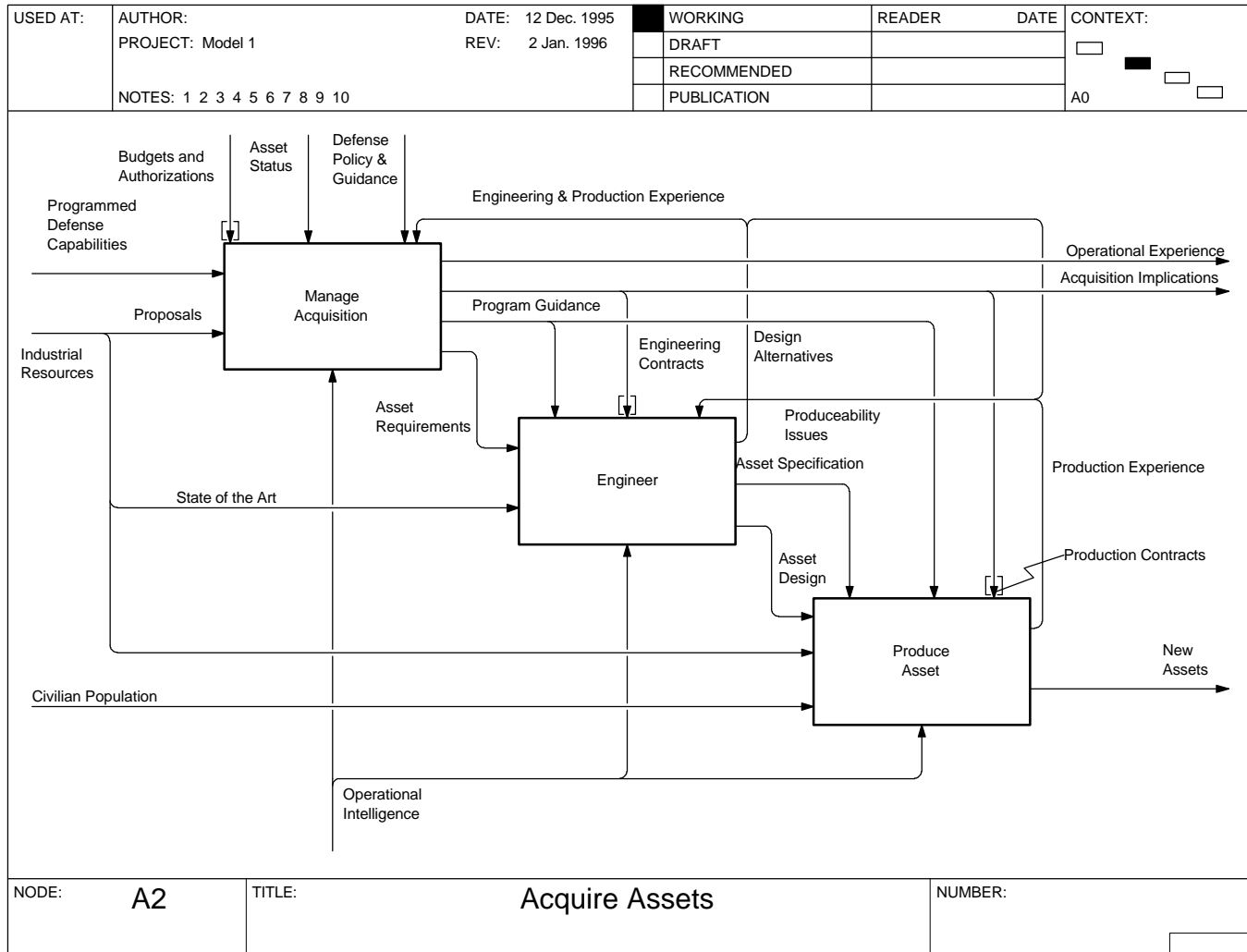
- **Establish Direction** - guides all defense activities within allocated resources;
- **Acquire Assets** - obtains the products and services (people, weapon systems, logistics, supplies, and other assets) needed to develop forces and sustain operations;
- **Provide Capabilities** - develops ready forces, projects them to the area of operations, and sustains them during peace, crisis, transition, and war; and
- **Employ Forces** - executes assigned missions of the Department, including warfighting, peacekeeping, and humanitarian assistance.

Among those activities, "Acquire Assets" is the activity that is supported by the PMO. The following page depicts the "Acquire Assets" activity within the DoD Enterprise Model.

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<sup>8</sup> From *CIM Process Improvement Methodology for DoD Functional Managers*, D. Appleton, Publisher.

<sup>9</sup> *DoD Enterprise Model, Volume II*, January 1994.



**Figure 4.2.1-1 DoD Enterprise Model “Acquire Assets” (A2)**

The DoD Enterprise model defines the “Acquire Assets” activity as follows:

**Acquire Assets (A2):**

*This major activity of the defense enterprise obtains assets to support requirements, bounded by the resources, timing, and force structures established in the previous major activity, Establish Direction. It manages and administers acquisitions to ensure they adhere to acquisition policy, satisfy program requirements, and meet planned objectives. It conducts research to increase the "state-of-the-art"; designs, demonstrates and tests military solution; produces products; and recruits/accesses military and civilian personnel.*

*This activity manufactures military weapons and munitions, buys supplies and services, and accesses individuals. It responds to the legislative requirements and statutory programs directed by Department managers.*

*Assets are defined as those people, goods, and services for which the Department expends monies and receives civilian and military personnel, materiel items of inventory, and services or some other specified deliverable that will be managed by the Department. For the purposes of this model, assets are defined specifically as: people, material (including equipment, supply items, technical publications, software systems), funds, facilities and real estate.*

*Acquisition of assets involves the detailed reconciliation of requirements to include the assessment of available goods and services, acquisition of technology and developmental items, purchasing, manufacturing, integrating and testing, and any preparation necessary to ensure delivery of a useable asset through the asset distribution systems (e.g., personnel, equipment). Therefore, for example, accession training for military personnel is included in this activity.*

As shown in Figure 4.2.1-1, the “Acquire Assets” Activity has three sub-activities: Manage Acquisition (A21), Engineer (A22), and Produce Assets (A23). These activities are defined below:

**Manage Acquisition (A21):**

*This activity performs the management functions needed to successfully implement approved acquisition programs and plans. It provides the program manager functions of baseline control, contracting and contract administration, and DAB and other oversight preparation/support.*

*Acquisition guidance controls the day-to-day functioning of the program office, development activities, and contractors. It provides management review, direction, and reporting to ensure that baselines are maintained, issues and problems are identified and resolved, and program performance is reported through the acquisition "chain of command" (e.g., via Selected Acquisition Reports (SAR)).*

*Acquisition programs remain responsive to user needs, acquisition policy, and DoD standards through continual refinement and definition of requirements, programmatic and technical reviews, and approvals to proceed from one phase of the life-cycle to the next. The results of studies, analyses, and demonstration/tests are provided by this activity to enable decisions about continuation/termination.*

*Manage Acquisition performs all contract-related functions. It issues solicitations, accepts and evaluates proposals, awards contracts, and administers contracts in accordance with federal laws and DoD regulations and policies (e.g., the Federal Acquisition Regulations (FAR)). It monitors the delivery of goods and services, approves payments, prepares and transmits bills, contracts may be used by the Provide Capabilities activity, the contracts themselves are administered by Manage Acquisition.*

**Engineer (A22):**

*This activity develops military solutions to meet validated mission needs and satisfy user requirements for new or modified asset capabilities, personnel, or material. It conducts different types of research, performs engineering studies and analyses, demonstrates solutions, and tests and evaluates designs and specifications.*

*Research includes scientific study and experiments to increase knowledge of the physical, engineering, environmental, and life sciences. It progresses from basic research through exploratory and advanced research to establish the basis for full scale engineering development. Basic research addresses technology and knowledge of potential value to the national security mission. Exploratory development assesses the feasibility and practicality of proposed solutions to military problems short of producing and actual asset. Advanced development produces test assets to prove-out solutions that have potential military applications. Selected programs go through a development phase to reduce the risk associated with technology innovation in a real-world environment. These include Advanced Technical Demonstrations (ATDs).*

*Engineering is the iterative process of developing designs that specify the form, fit, and function of assets. Alternative designs are assessed to achieve the best balance of performance, supportability, costs, and risk. Total asset requirements are addressed including equipment, material, facilities, people, and life-cycle support. Manufacturing requirements are considered in the design process to ensure the ability to produce assets. Resource availability (e.g., the labor pool), is also a key factor in sound designs. The health of the industrial base and U.S. competitiveness and ability to reconstitute are integral to the engineering process.*

*Demonstration and test is the major control mechanism of the Acquire Assets activity. Acquisition programs advance from one phase to the next, and qualify for major new funding increments, by achieving management and oversight thresholds, verified by testing and evaluation. In the case of selected program designs, prototypes are produced and demonstrated. These can be refined until judged ready for production or program termination.*

**Produce Asset (A23):**

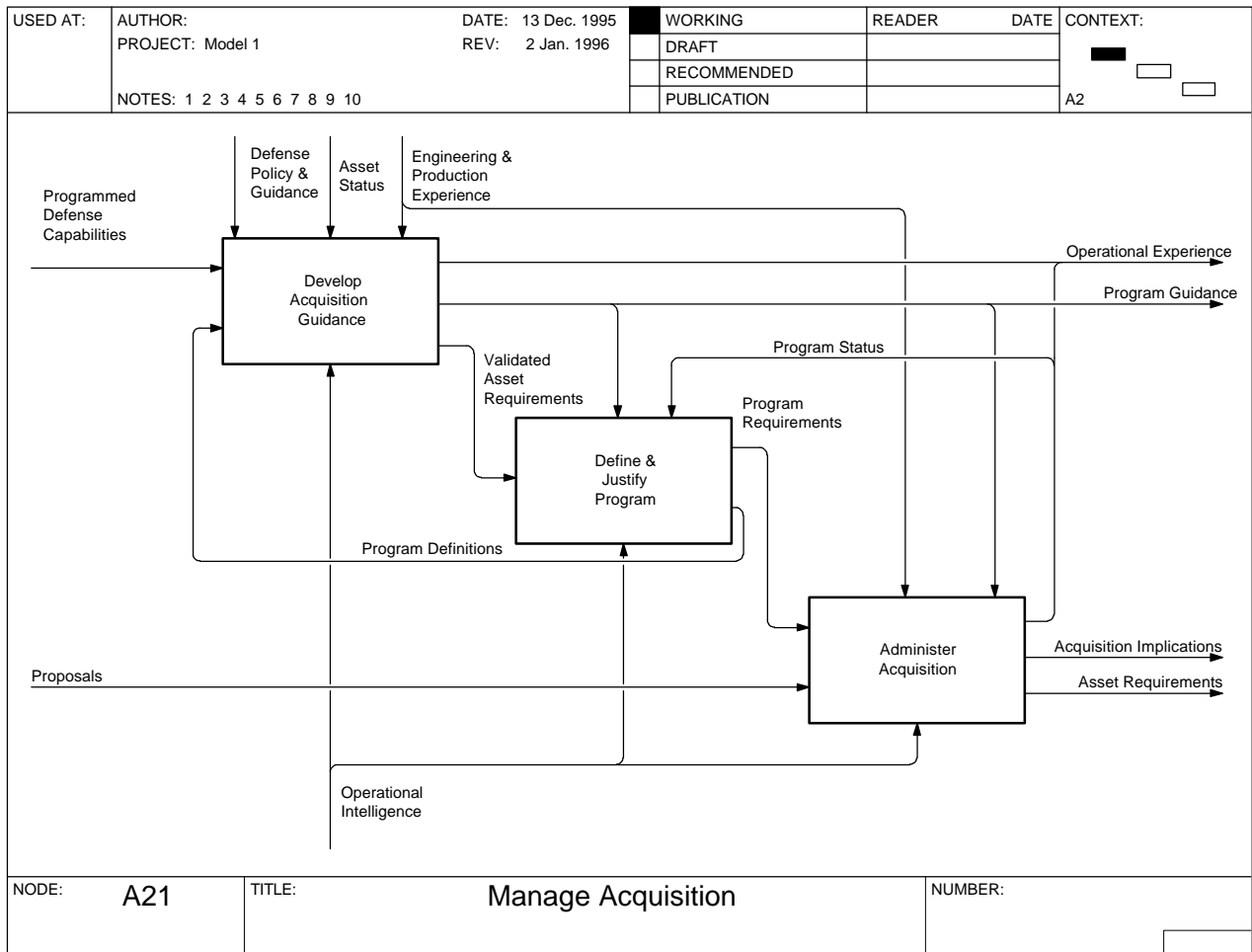
*This activity involves the actual building/manufacture, employment through recruiting (accession), or buying/leasing of assets to include all activities typically associated with bringing new personnel, material items, real estate/facilities, or services into the inventory (e.g., first destination transportation of material items by the vendor from source of acquisition to point of DoD distribution is included). This activity also includes preparing assets for distribution to include any actions necessary to ensure minimum essential asset usefulness at the point of receipt (e.g., providing all military personnel with initial entry training to produce useful officers and enlisted personnel).*

*The Build function manufactures, constructs, and assembles assets. The process itself may be conducted by Government or industry, or both. Sub-functions include the staging of materials and other resources, set-up, fabrication, assembly, and quality control of the process and the product.*

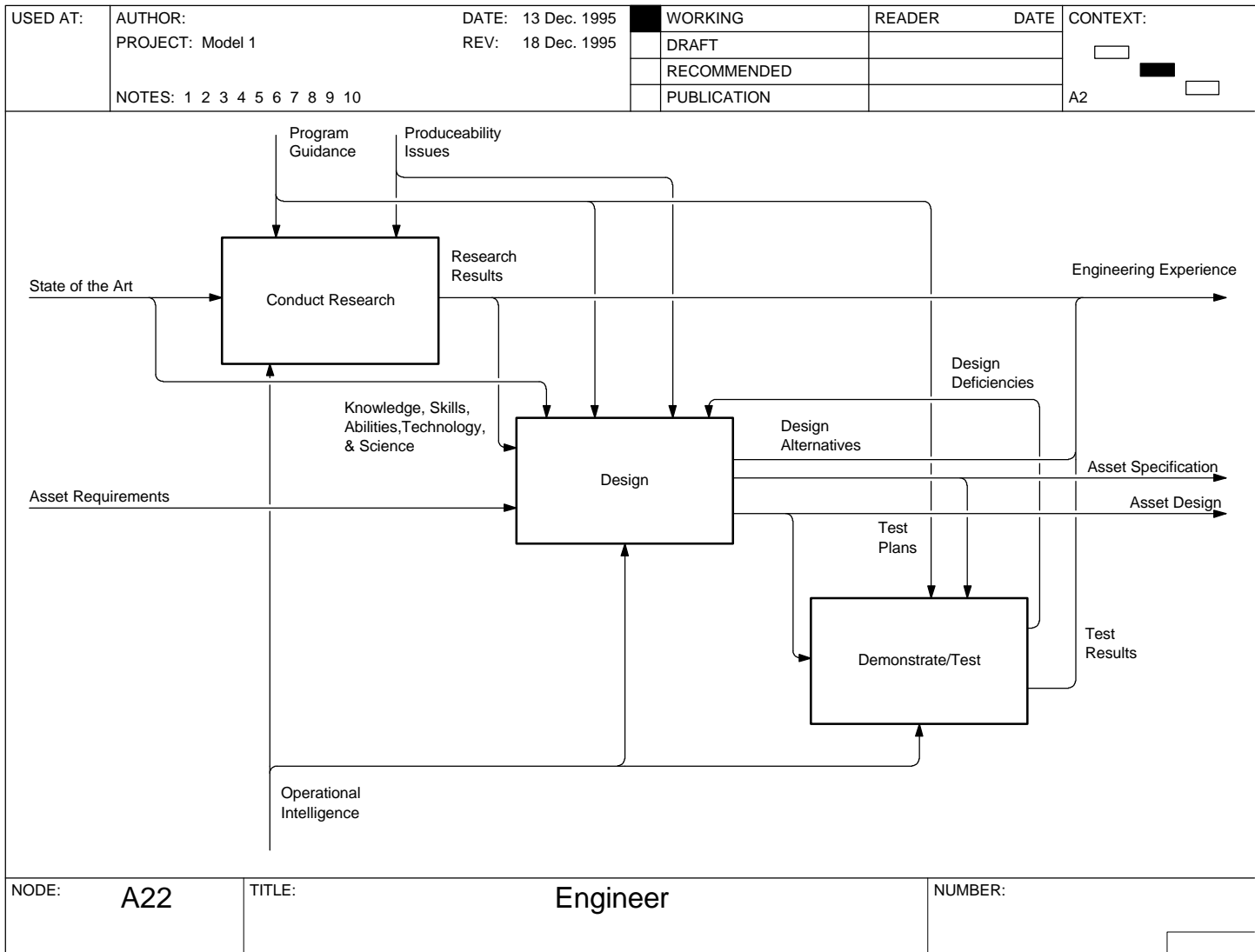
*Access is the function that enlists the skills and services of people to satisfy the DoD mission. It includes the recruiting of military personnel and the employment of Government civilian personnel. In order to obtain a minimally useful individual, all basic training and initial orientation are included in this function.*

*Buy/Lease is the function that obtains commercially available goods and services for the Department. It does not duplicate the contract management functions described under Manage Acquisition. Rather, it evaluates the adequacy of commercial products and services against Government requirements and standards, accepts delivery of assets, and evaluates the performance of commercial items and services as they are used in the Department.*

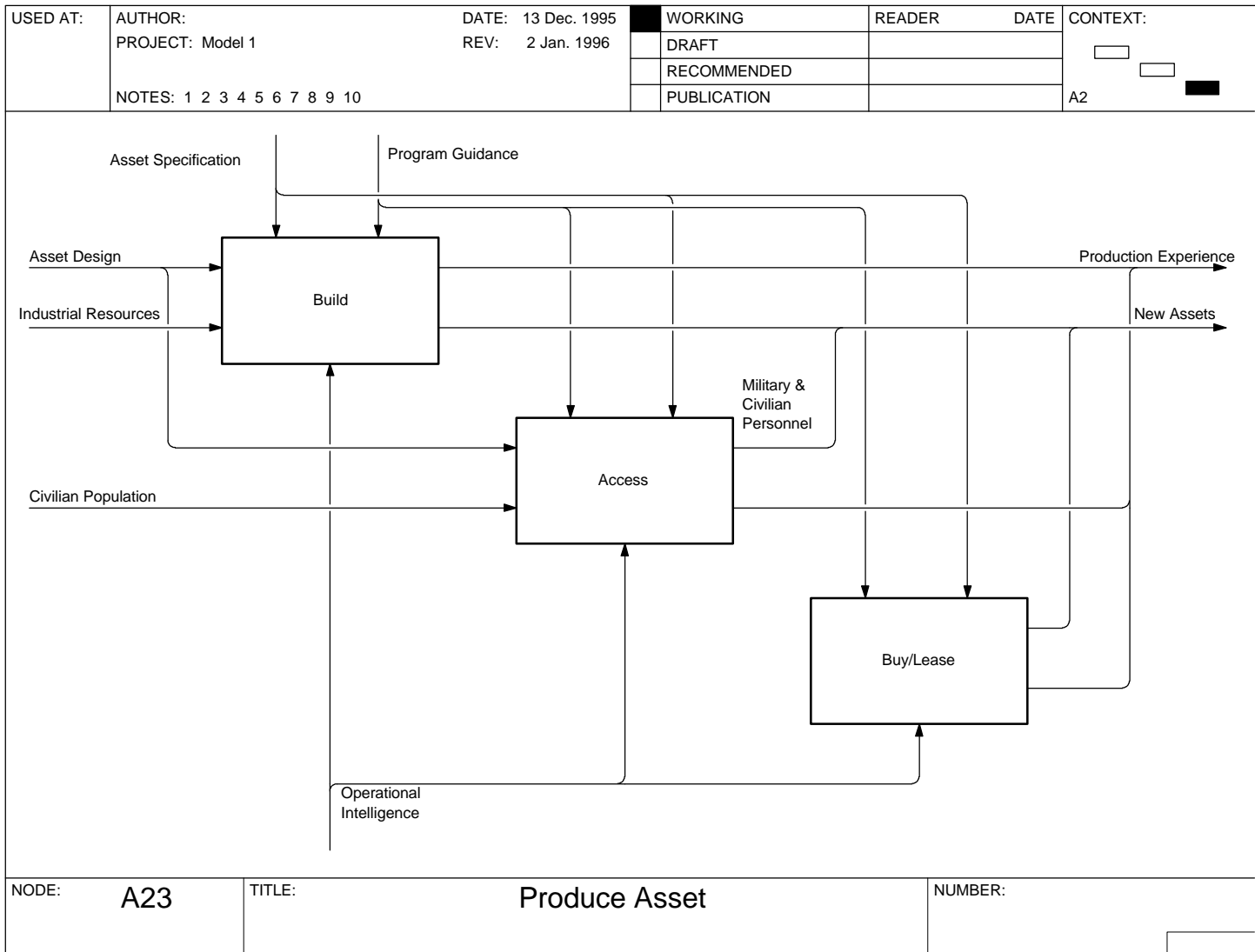
Figures 4.2.1-2 through 4.2.1-4 display the IDEF0 Activity Models for the following activities: Manage Acquisition (A21), Engineer (A22), and Produce Asset (A23).



**Figure 4.2.1-2 Manage Acquisition (A21)**

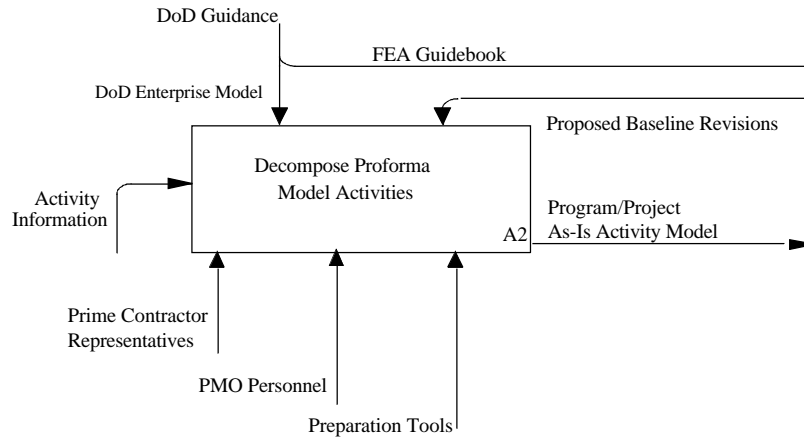


**Figure 4.2.1-3 Engineer (A22)**



**Figure 4.2.1-4 Produce Asset (A23)**

These three figures (Figures 4.2.1-2 through 4.2.1-4) represent the proforma model. The business case team will decompose this proforma model to a level of detail necessary to describe the activities performed in support of the program. As shown in Figure 4.2.1-5, program activity information gathered as part of activity A1 is used as an input to extend the proforma model.



**Figure 4.2.1-5 Process A2**

PMO personnel, using preparation tools such as BPWin and aided by prime contractor representatives if required, will extend the proforma model so it is representative of the activities that occur in support of the program. This extended model will be revised as necessary during baseline revision to form the Program/Project AS-IS Activity Model. It is important to note that the Program/Project AS-IS Activity Model can be considered a child to the parent DoD Enterprise Model from which it was derived. This Program/Project AS-IS Activity Model will be used to perform activity-based costing during Activity A24. In addition, the mechanisms identified will be used during activity A23. This process deals with the development and documentation of the relationship between the program’s activities and the technical infrastructure that supports these activities.

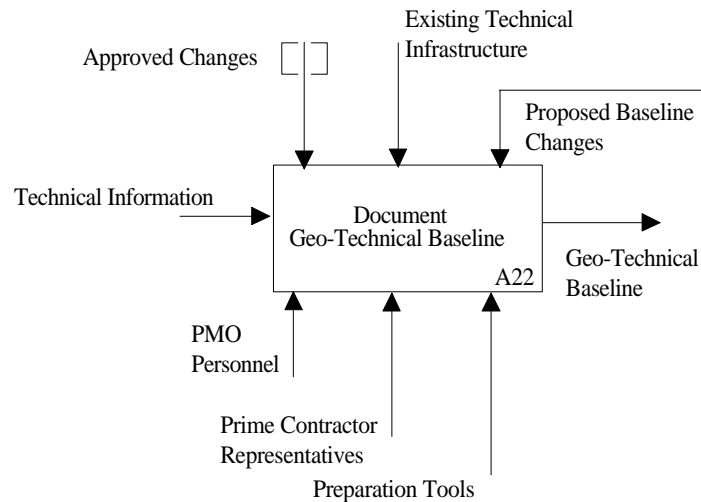
#### **4.2.2 Document Geo-Technical Baseline (A22)**

*“It was not so very long ago that people thought that semiconductors were part-time orchestra leaders and microchips were very small snack foods.” - **Geraldine Ferraro***

The focal point of the IDE Business Case is the geo-technical baseline. Identification of improvement initiatives to the geo-technical infrastructure differentiates the IDE Business Case from other traditional BPR and FEA projects. The geo-technical baseline is defined as:

*The Program/Project’s technical foundation that consists of the existing technical infrastructure, location of the infrastructure, data exchange occurring within the infrastructure, and includes any approved changes.*

The purpose of documenting the geo-technical baseline is to gain an understanding of how data are currently exchanged to support the program. Because the essence of the IDE idea is to “create data once, and use it many times,” documenting the geo-technical baseline will not only drive out improvement initiatives for the IDE Business Case, but also identify performance metrics that will be used to measure the improvement initiatives. Only by gaining a clear understanding of current business practices with respect to data exchange, will the program manager and the BPR team be able to complete an IDE Business Case. All improvement initiatives for an IDE Business Case will be based upon improving data exchange in support of the program. In essence, therefore, an IDE Business Case is a subset of an overall program business case BPR project.



**Figure 4.2.2-1 Process A22**

As shown in Figure 4.2.2-1, PMO personnel and prime contractor representatives, if required, will use preparation tools to document the geo-technical baseline. The PMO personnel will take the existing technical information gathered during Activity A1, including any approved changes to the existing technical infrastructure, to document the baseline. After the initial geo-technical baseline is completed, the baseline will validate any changes recommended as a result of the validation process will be considered.

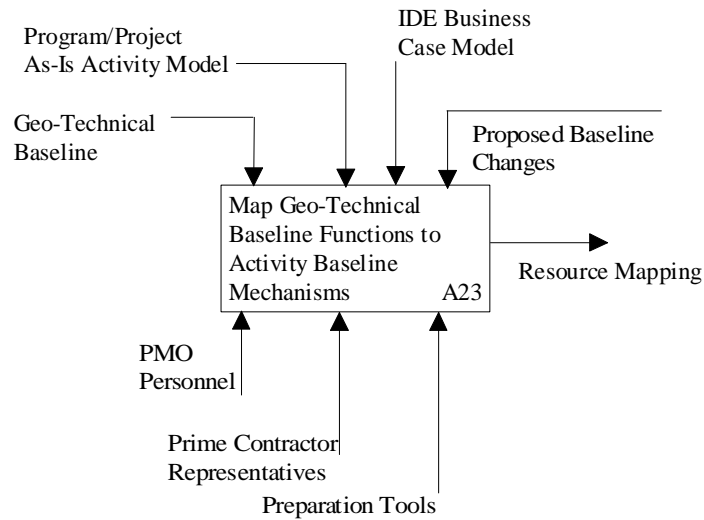
The primary preparation tool used to document the geo-technical baseline is the Geo-Technical Baseline Tool. This database will capture relevant geo-technical information by prompting the user to enter the appropriate responses to the interface-generated questions. This information will be used to generate reports that document the geo-technical baseline. The Geo-Technical Baseline Tool is described in Section 5.0.

### 4.2.3 Map Geo-Technical Baseline Functions to Activity Baseline Mechanisms (A23)

*“Everything should be made as simple as possible, but not simpler.” - Albert Einstein*

Mechanisms are those resources used to realize the completion of an activity. They represent objects (people, machines, etc.) or energy that make possible the successful completion of an activity. It is important to note that activities do not consume their enabling mechanisms. Mechanisms are defined as *resources (usually people, machines, or systems) that provide energy to, or perform, the activity.*<sup>10</sup>

By mapping the geo-technical elements or components identified during activity A22 to the mechanisms identified during Activity A21, the relationship among a project or program’s activities, activity locations, and the technical infrastructure elements can be identified and documented. A clear understanding of these relationships is essential to the development and evaluation of technical infrastructure initiatives and alternatives. Further, this process will assist in identifying initiatives and alternatives that have no relationship to the technical infrastructure.



**Figure 4.2.3-1 Process A23**

As shown in Figure 4.2.3-1, the program/project activity model, as well as the geo-technical baseline element information gathered using the Geo-Technical Baseline Tool, controls the mapping of the geo-technical baseline functions to the activities performed by the PMO in support of the program. This mapping will be performed by PMO personnel, aided by prime contractor representatives if required. The output of the activity is a cross-referenced resource map that relates specific geo-technical elements to the mechanisms that perform the activities identified by the program/project activity model. During

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<sup>10</sup> From the *Electronic College of Process Innovation*.

validation, any changes to the geo-technical baseline or program/project activity model will be considered prior to finalizing the resource map.

#### 4.2.4 Trace Costs to Activities (A24)

*“Accountants are the witch doctors of the modern world.” - J. Harmon*

Business Process Reengineering is the radical redesign and change of current business processes and practices to achieve cost savings and greater performance, and to gain higher product quality. To ascertain the economic impact initiatives will have on a business process, it is first necessary to gain an understanding of the costs of performing current business processes. The methodology used to ascertain the cost of AS-IS activities and TO-BE activities is Activity-Based Costing (ABC). ABC focuses on the activity structure of an organization, rather than on the traditional departmental or organizational format. The process provides quantitative activity-based cost information to

- assess continuing operations and project future impacts for a mature activity-based organization;
- evaluate selected process flows, relative costs of various activities, and potential effects of activity modifications; and
- analyze alternative process flows with comparative economic evaluation.<sup>11</sup>

ABC includes the collection of financial and operational performance information about significant activities of an enterprise. Activity-Based Costing is defined as:

*an accounting technique that allows an enterprise to determine the actual costs associated with each product and service produced by that enterprise without regard to the organizational structure of the enterprise.*<sup>12</sup>

It is important to note that the above definition describes ABC as a methodology that accounts for activity costs, rather than for costs of enterprise functions. (An enterprise function includes management, engineering, research, etc.) ABC is a relatively new concept to aid management in determining the actual costs of producing a product. However, the major difficulty in using the ABC methodology has been the variance of the practices, methods, definitions, procedures, and standards applied to the methodology. Further, ABC requires professional judgment and creativity when applied to a transitional DoD business process model.<sup>13</sup> DoD has attempted to mitigate these problems by

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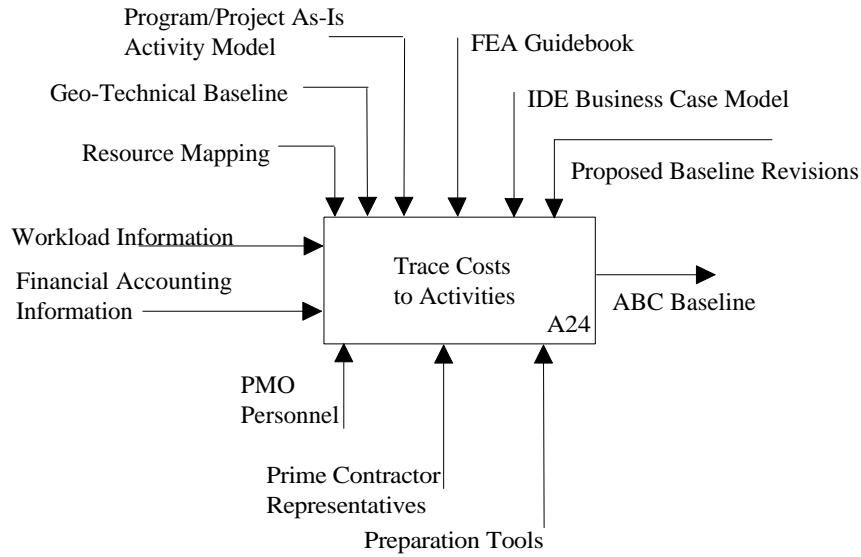
<sup>11</sup> From the *DoD Activity-Based Costing Guidebook*.

<sup>12</sup> From the *Functional Economic Analysis Guidebook*, DoD, Version 1.0.”

<sup>13</sup> From the *DoD Activity-Based Costing Guidebook*.

developing an “Activity Based Costing Guidebook,” available from the Defense Electronic College of Process Innovation.

The ABC methodology focuses on cost elements to perform activities. Cost Elements are factors of production and are the specific input resources to activities. (They are the activities’ mechanisms.) Within the FEA Model, cost elements include military labor, civilian labor, information technology, facilities, materiel, and other.



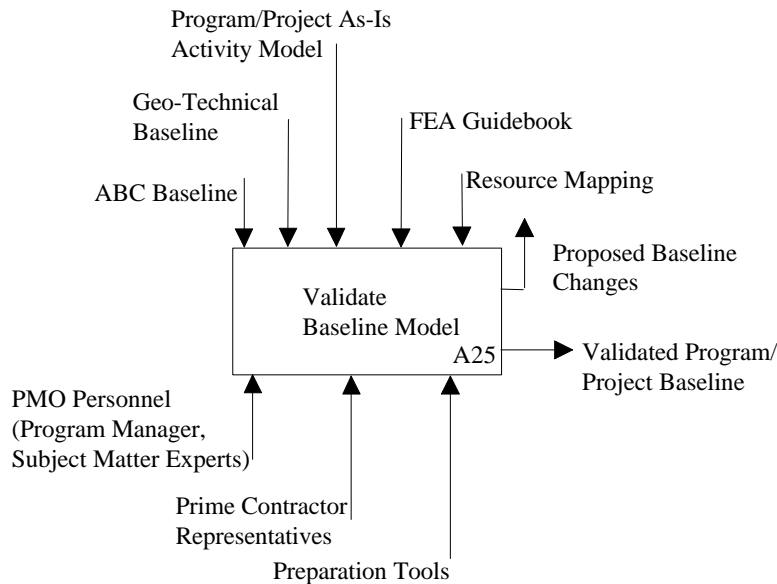
**Figure 4.2.4-1 Process A24**

As shown in Figure 4.2.4-1, PMO personnel, aided by prime contractor representatives if required, will utilize preparation tools such as EasyABC to produce the ABC baseline. The ABC baseline is developed by analyzing current workload and financial accounting information to attach costs from the cost element pools to the mechanisms associated with the activities identified in the program/project AS-IS Activity Model. Costs should be gathered and allocated within the organization at the lowest possible layer, normally the smallest element that has an assigned manager. The cost will be allocated from the element pools to the activity mechanisms within the program/project AS-IS Model, typically based upon interviews with managers in charge of the function or activity. Once costs are attached to activity mechanisms, they are entered in an activity cost worksheet, or entered into TurboBPR. It is important to note that the majority of cost associated with performing an activity may be labor. It is suggested that the FEA Guidebook be used when performing labor pool allocations to activities.

#### 4.2.5 Validate Baseline Model (A25)

*“It is not the end, it is not the beginning of the end. It is perhaps the end of the beginning.” - Sir Winston Churchill*

Validating the baseline model is the process of determining and correcting any deficiencies and inconsistencies to form a correct baseline model. Performing this activity tests and authenticates the documented ABC baseline, geo-technical baseline, and activity baseline, and proposes revisions to each baseline as required to form a true representation of the program’s AS-IS business state.



**Figure 4.2.5-1 Process A25**

Essentially this activity is performed as a “reality-check,” to determine if the work completed thus far in the BPR effort makes sense. As can be seen by Figure 4.2.5-1, the program manager, together with subject matter experts if required, will review the geo-technical baseline, ABC baseline, program/project activity model, and resource mapping for reasonableness, completeness, accuracy, and materiality. Changes to any of the baselines, maps, or models proposed by the program manager or subject matter experts will be considered within activities A21 through A24. Once all changes to the baselines, maps, and models have occurred, the resultant is a validated Program/Project Baseline. This Program/Project Baseline describes the current “business state,” represented by the ABC Baseline, Geo-Technical Baseline, Resource Map, and Program/Project Activity Model.

By performing the A2 Activity, “Establish Baseline,” the BPR team will have, on an ad-hoc basis, identified areas for improving current business processes. The next section of this guidebook establishes the process for formalizing and documenting improvements to current business practices.

### 4.3 Develop Alternatives (A3)

*“The rule for staying employed as a program manager is to give ‘em a number, or give ‘em a date, but never give ‘em both at the same time.” - Anonymous*

The third activity associated with preparing an IDE Business Case is to develop alternatives. Alternatives are logical “packages” of “initiatives.” An initiative is some fundamental change to the current business process that implements the program’s strategy to move the program toward the program’s goal or imperative, within the context of the program’s vision and consistent with the program’s mission. The mission statement defines and justifies why the program exists. The program’s vision describes how the program will achieve its mission in the future. Program goals are those outcomes that the program will attain in meeting the program’s vision. A goal is the program’s aim for achieving process improvement with respect to a critical success factor, where critical success factors answer the question, “What does it take to fulfill the program’s mission and achieve the program’s mission?” Development of critical success factors will drive out the performance metrics used to measure the success of an alternative.

“Develop alternatives” is the process of identifying how to achieve the program’s TO-BE state (where the TO-BE state is the program’s target goal). This activity includes developing an understanding of the TO-BE state, determining improvement areas and developing implementation strategies to migrate to the TO-BE state, assessing emerging relevant technologies that could be used to achieve the TO-BE state, and identifying initiatives and aggregating those initiatives into alternatives complete with action plans to achieve the TO-BE state. Each alternative should include some plan for moving the program toward its vision. The “develop alternatives” activity consists of five sub-activities:

- Understand IDE End-State;
- Identify Improvement Opportunities;
- Assess Technologies;
- Identify and Document Initiatives; and
- Package Alternatives, Develop Action Plans.

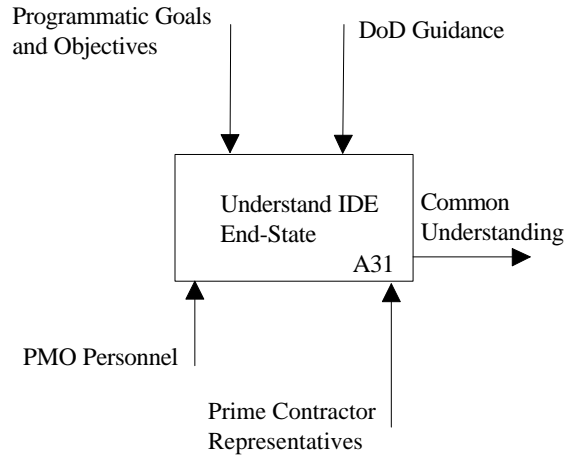
The following sections describe each of these subactivities.

#### 4.3.1 Understand IDE End-State (A31)

*“To know the road ahead, ask those coming back.” - Chinese Proverb*

To develop an IDE Business Case, the BPR team must gain a thorough understanding of the IDE vision incorporated within the DoD CALS initiative. The DoD is committed to incorporating CALS into functional process improvements. As DoD applies the best technologies, processes, and standards for the development, management, exchange, and

use of business and technical information among and within Governmental and industrial enterprises, an IDE will be generated. The IDE is defined as the business environment created by the application of existing national and international standards, practices, and technologies to automate the management and exchange of information. The IDE directly enables Integrated Product and Process Development while increasing the agility and decreasing cycle times of the Defense Enterprise. CALS is founded on the recognition that affordable, readily accessible, and timely technical and business information is a critical element of the acquisition process.<sup>14</sup>



**Figure 4.3.1-1 Process A31**

As shown in Figure 4.3.1-1, PMO personnel, working with prime contractor representatives if required, will develop a common understanding based upon the program’s goals and objectives and within the context of DoD’s IDE vision. This common understanding will form the program’s IDE vision. Once the program has formed its IDE vision, the BPR team will develop goals for achieving the vision. Initiatives, performance metrics, alternatives, and action plans will be derived from the program’s IDE goals.

There is a multitude of information, handbooks, directives, etc., concerning the DoD CALS initiative, the IDE, as well as business case and FEA guidance. It is recommended that the BPR team perform searches of the DoD CALS Internet site, as well as the Electronic College of Process Innovation Internet site to obtain information required to gain an understanding of the DoD IDE vision.

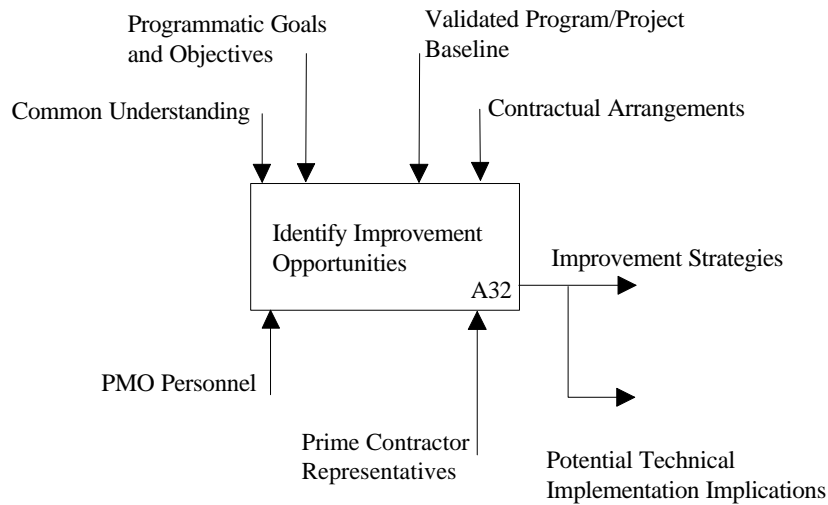
### **4.3.2 Identify Improvement Opportunities (A32)**

*“Don’t worry about people stealing your ideas. If your ideas are any good, you’ll have to ram them down people’s throats.” - Howard Aiken*

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<sup>14</sup> From the *CALS Home Page*.

Improvement opportunities are identified by the BPR team through brainstorming sessions. However, many of the seeds for these improvement opportunities were planted during the A2 Activity (Establish Baseline) while the BPR team was studying and documenting current business processes and costs. Improvement opportunities are driven by the outcomes of the initial strategic planning sessions discussed in Section 3.0. Strategic planning serves as the starting point for each BPR project, as well as the starting point for development of an IDE Business Case. The strategic planning outcomes include the program's mission and vision statements, as well as goals, performance measures, and strategies for achieving the program's IDE vision (TO-BE state). The program's mission statement should clearly state the purpose of the program. The program's vision statement should clearly state how the program will achieve its mission in the future, and functions to guide the program's action. For an IDE Business Case, the program's IDE vision will be developed within the context of DoD's IDE vision.



**Figure 4.3.2-1 Process A32**

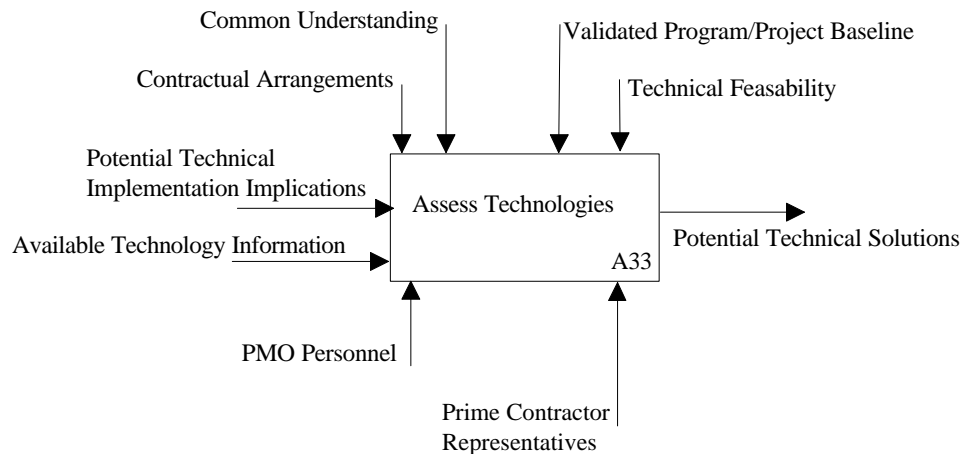
As shown in Figure 4.3.2-1, PMO personnel, aided by prime contractor representatives if required, will develop improvement strategies, as well as document any technical implementation issues that may arise as a consequence of an identified strategy. These improvement strategies will be based on the program's understanding of the DoD's IDE vision, as well as the program's own goals and objectives. It is important to note that identified improvement strategies must consider existing contractual obligations into which the program office has entered, for they may constrain the identified improvement strategy. It is also important to understand that improvement opportunities that are not dependent upon, or enabled by, IDE-related improvements should be considered individually and not be combined with IDE opportunities, for these opportunities tend to mask or over-state the true benefit of IDE improvements.

### 4.3.3 Assess Technologies (A33)

*“Technological progress has often provided us a more efficient means of going backward.” - Aldous Huxley*

The fundamental purpose of the IDE Business Case is to provide the decision maker with the comparative analysis for making investments in the program’s geo-technical configuration. Therefore, the IDE Business Case is a subset of a full program business case undertaken as part of a BPR project. The investments made in the program’s geo-technical configuration must support the activities of the program by making the activities more reliable, cost-effective, and timely. To this end, the team must gather, compile, filter, and catalog information about technologies that may be used to achieve the TO-BE state (where the TO-BE state is the program’s target goal). The team will then assess the technical feasibility of the catalogued technologies to identify any existing and emerging technologies that may be used to achieve the TO-BE state. Based upon the previously documented strategies for implementing improvement opportunities, the team will determine the applicability of any existing or emerging technologies that can contribute to moving current business processes toward the program’s TO-BE State.

It is important to note that improvement opportunities that do not require technological improvements be implemented prior to performing new business-process automation. Non-value added activities should be eliminated from the program prior to considering technical improvements, as it is cost prohibitive to automate poor processes.



**Figure 4.3.3-1 Process A33**

As shown in Figure 4.3.3-1, PMO personnel, aided by prime contractor representatives if required, will assess existing and emerging technologies that may provide technical solutions to move the program toward the IDE vision. Information about available technology and any implementation implications will be used to develop the technical solutions. The common understanding of the IDE, the program’s baseline, as well as the technical feasibility of the solutions and any existing contractual obligations, that would preclude the implementation of the solutions, must be considered.

#### **4.3.4 Identify and Document Initiatives (A34)**

*“To change and change for the better are two different things.” - German Proverb*

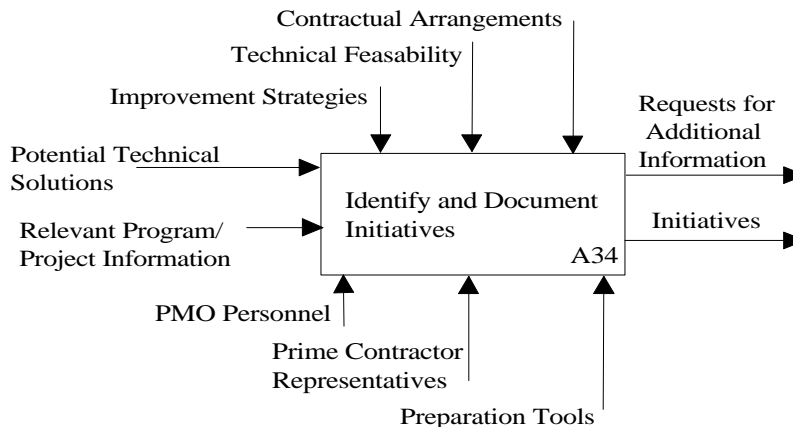
Initiatives are the projects that realize improvement opportunities. They describe how the program will implement strategies (in terms of specific actions, timelines, and resources) to move the program toward the TO-BE state. Initiatives have results and consume time and/or other resources. To identify initiatives, the team must search for as many new and creative ways of doing business as possible.<sup>15</sup> Using the strategies developed and assessing the applicability of existing and emerging technologies, the team will identify and document initiatives that can be used to improve current business processes by moving those processes toward the IDE vision. Further, the team will determine the impact and assess the risks of implementing the documented initiatives, and develop cost estimates and action plans for implementing the identified initiatives.

Initiatives are derived from improvement opportunities that may have been identified during the development of the program’s baseline, as well as the strategies documented for moving the program toward the TO-BE IDE state. Initiatives are what needs to be done (actions) to move the program toward the TO-BE state. Initiatives are developed

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<sup>15</sup> From *User’s Guide to TurboBPR, Version 2.0*, 1995, Systems Research and Applications Corporation.

during brainstorming sessions by the team. The team studies current business activities to identify changes to activity Inputs, Controls, Outputs, and Mechanisms (ICOMS) that will implement at least one improvement strategy. Initiatives may also identify activities that do not add value to the program and should be eliminated or reduced. Once identified, initiatives will have cost information attached to them that reflect the resources required to implement the initiative.



**Figure 4.3.4-1 Process A34**

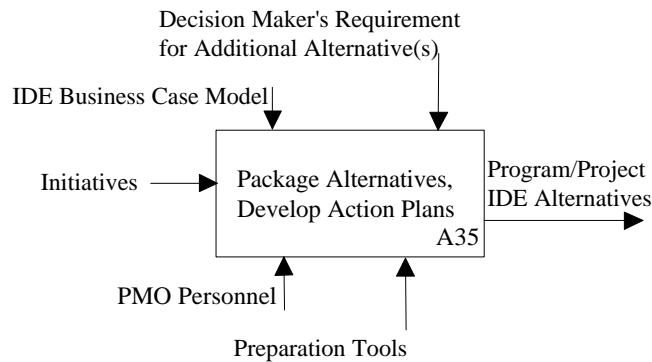
As shown in Figure 4.3.4-1, PMO personnel, aided by prime contractor representatives if required, will use preparation tools (such as TurboBPR) to identify and document initiatives. The initiatives will be derived from potential technical solutions previously identified in activity A33 as well as relevant program/project information obtained during development of the program AS-IS business state. Identified initiatives will be based upon previously established improvement strategies (Activity A32) and will consider previous contractual obligations as well as the technical feasibility of the initiative. Any additional information required to document the initiative (e.g., cost data) will be obtained by the team.

#### **4.3.5 Package Alternatives, Develop Action Plans (A35)**

*“Anyone who says businessmen deal in facts, not fiction, has never read old five-year projections.” - Malcom Forbes*

The object of the IDE Business Case is to enable the program manager to identify investments that will move the program toward the IDE vision, yet an initiative may only consider a small area of improvement. Moreover, a tremendous amount of identified initiatives may be considered. Therefore, initiatives should be combined and analyzed as groups. These “groups” of initiatives are called alternatives, and consist of individually identified initiatives that, when combined to form a set, will achieve a program goal. These alternatives give the program manager a complete view of the financial, operational, and schedule impacts of implementing an alternative that will move the program toward the IDE TO-BE state.

At least two alternatives, exclusive of the program baseline, should be produced. The team will create alternatives using an iterative process, combining different initiatives together until a logical set is created. Once an alternative is created, the team will develop action plans, cost estimates, risk assessment, and timetables for implementing the alternative. These plans, estimates, and assessments are derived from the individual ones created during development of each initiative.



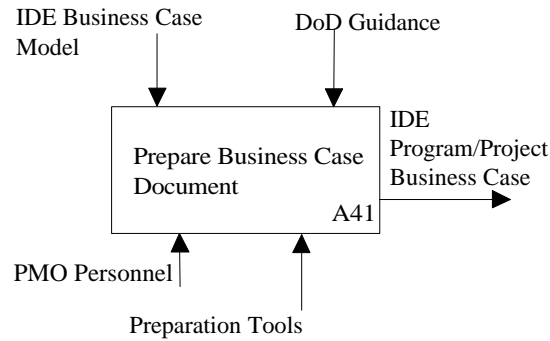
**Figure 4.3.5-1 Process A35**

As shown in Figure 4.3.5-1, PMO personnel will use preparation tools (such as TurboBPR and Easy ABC) to package alternatives and develop action plans for the alternatives from the initiatives previously identified in Activity A34. The team, when developing alternatives, will use the guidance contained in the IDE Business Case Model as well as the FEA Guidebook. Further, the team will consider any additional alternatives that the program manager deems appropriate.

#### **4.4 Package Results (A4)**

*“Great ideas need landing gear as well as wings.” - C.D. Jackson*

The last step in the preparation of an IDE Business Case is to package the results. This will entail preparing the IDE Business Case document for review, as well as preparing an executive summary for the decision maker. In addition, the team may be required to prepare presentation materials, such as overhead slides or interactive computer materials, that synopses the highlights and findings of the business case.



**Figure 4.4-1 Process A41**

As shown in Figure 4.4-1, PMO personnel will use preparation tools to prepare the IDE Business Case document. The business case document will be prepared in accordance with DoD guidance and will consider any templates or tools contained in the business case model. TurboBPR is an ideal choice as the tool for the preparation of the business case document. By utilizing TurboBPR’s user interface, the team can enter the business case data directly into the tool. AS-IS program information and TO-BE program information are entered, TurboBPR produces a business case document that contains the following major components:

- Program Mission, Vision, Goals, and Performance Measures;
- Operations Analysis;
- Initiatives;
- Alternatives; and
- Actuals.

Once the Program/Project Business Case document is prepared, the team will prepare an executive summary. The executive summary describes for the decision maker the outcomes of the business case, covering the main points succinctly. The executive summary and the business case document complete the IDE Business Case.

The team may be required to prepare additional presentation materials that describe the business case for audiences other than the Program Manager. The team will assemble presentation materials and tailor them to the specific audience as required by the request. These materials may be handouts, summaries, tables, overhead slides, or interactive computer materials.

## 5.0 THE GEO-TECHNICAL BASELINE

*“All technology should be assumed guilty until proven innocent.”* - **David Brower**

The most defining characteristic of an IDE Business Case is that it focuses upon changes to the program’s existing geo-technical baseline. This geo-technical baseline serves as the “launching point” for IDE initiatives development. The geo-technical baseline may be defined as follows:

The program/project’s technical foundation that consists of the existing technical infrastructure, location of the infrastructure, data exchange occurring within the infrastructure, and includes any approved changes to the current infrastructure.

Documenting the geo-technical baseline is the process of identifying and capturing the program’s current technical infrastructure’s capabilities, and the distribution of those capabilities (including planned changes) by geographical location. This process bounds the baseline within the context of the IDE, which is a major difference between the IDE Business Case and an FEA.

Documenting the program’s geo-technical baseline can be a time-consuming effort on the part of the BPR team. The team must develop an inventory of the program’s current hardware, software, location of equipment, data exchange, etc. Moreover, the team must tabulate and synthesize the inventoried information to form a true picture of the current “data commutation” occurring in support of the program so that the enabling mechanisms may be linked to the geo-technical baseline. Therefore, a formal approach to documenting the geo-technical baseline is required.

The Geo-Technical Baseline Tool (GTBT) is a conceptual tool designed to assist PMO personnel in documenting and reporting the geo-technical baseline while preparing an IDE Business Case. The conceptual GTBT is based on an entity-relationship data model, shown in Figure 5.0-1.

As can be seen by the partially attributed data model, the team must gather and synthesize geo-technical information including site, capabilities per site, functions, mechanism, etc. It is recommended that an automated tool be developed to query PMO personnel, and automatically develop the geo-technical inventory necessary to establish the baseline.

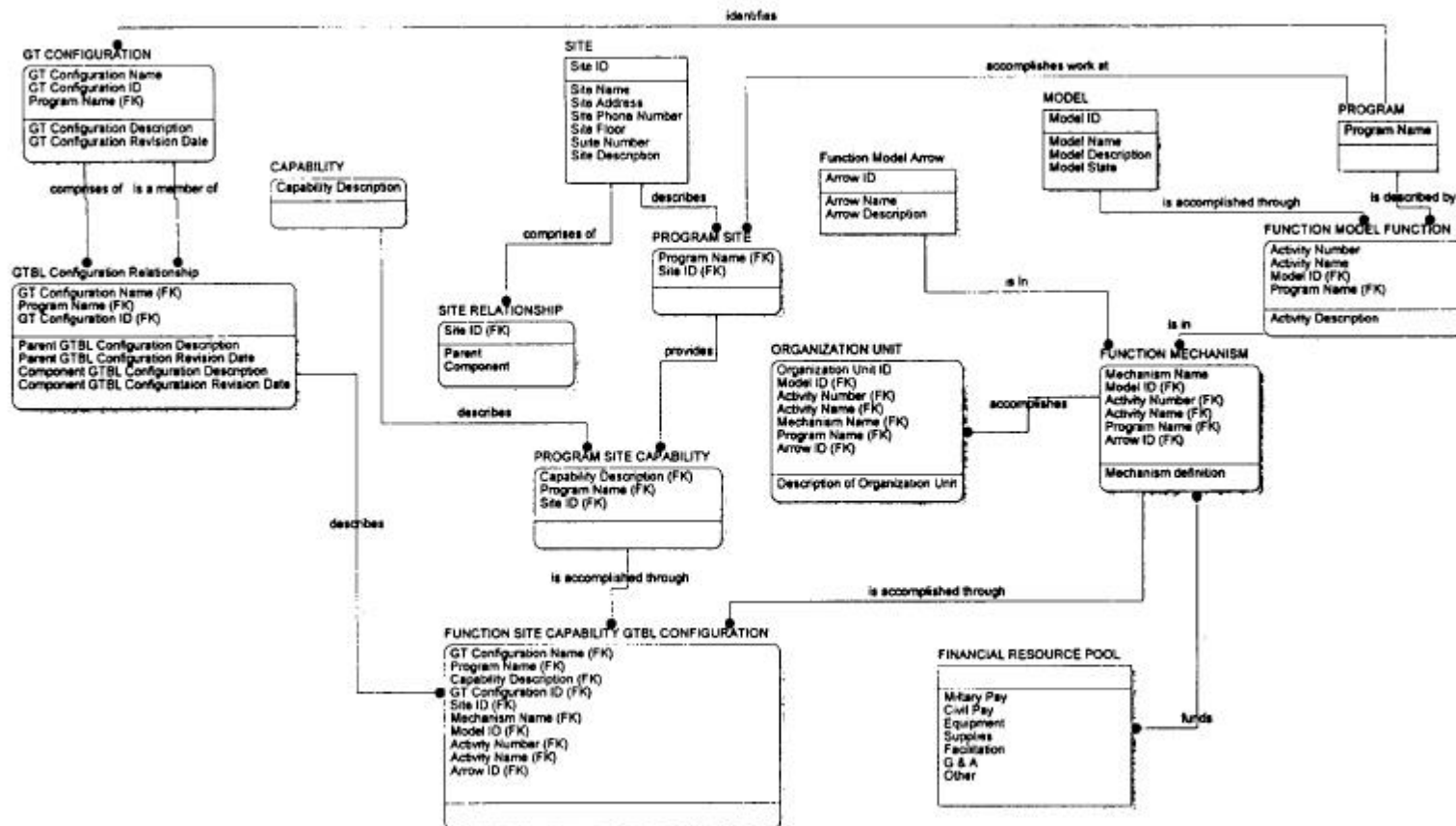


Figure 5.0-1 GTBT Entity-Relationship Data Model

## 6.0 FINAL THOUGHTS

*“If you want to succeed you should strike out on new paths, rather than travel the worn paths of accepted success.”* - **John D. Rockefeller**

Much has been said and written on the subject of Business Process Reengineering. A wealth of books, tools, case studies, benchmarks, etc., is available to the program manager performing BPR, but little guidance exists for the program manager faced with the task of developing an IDE Business Case. This report has attempted to bring many disassociated ideas and tools together to form a “starting point” for IDE Business Case development. However, much work is yet to be done.

The *CALS IDE Shared Data Solution (SDS) Deployment Plan (Draft)* is a good example of how to meld the IDE idea into a weapon-system program. Through the use of IDEF0 activity models, the program manager can see, at a very high level, the steps to consider when looking for solutions to shared data problems. Combining the ideas of the SDS document with the ideas presented in this document could be extremely beneficial to a program manager while developing initiatives and alternatives to further the realization IDE vision within DoD. It is therefore recommended that the *CALS IDE Shared Data Solution (SDS) Deployment Plan (Draft)* be “married” with the *Business Case Model Acquisition Guidebook* to form an overarching plan for IDE Business Cases for a weapon system program.

It is also important to continue to develop an automated tool for the documentation of the geo-technical baseline. Such a tool could aid the program manager in developing IDE-related initiatives, thus moving the program toward the CALS IDE vision. It is recommended that this tool be integrated with TurboBPR, thus automating many of the tasks required to perform an IDE Business Case.

## ***SUGGESTED READINGS***

*A Concise Guide to the IDEF0 Modeling Technique*, Hill/Robinson, 1995, Enterprise Technology Concepts Press.

*CALS Integrated Data Environment Shared Data Solution Deployment Plan (Draft)*, Director, CALS, 1995.

*Business Process Reengineering*, Johansson et. al., 1993, John Wiley & Sons

*DoD Enterprise Model, Volume II*, Office of the Director of Defense Information, 1994.

*Functional Economic Analysis Guidebook*, CIM, 1993.

*CIM Process Improvement Methodology for DoD Functional Managers*, DoD, D. Appleton, Publisher.

*Framework for Managing Process Improvement*, DoD, 1994.

*Business Process Reengineering Process Model, Version 3*, Office of the Deputy Assistant Secretary of Defense (Information Management).

*DoD Activity-Based Costing Guidebook*, DoD.

*User's Guide to TurboBPR, Version 2.0*, 1995, Systems Research and Application Corporation.

## **APPENDIX A: ACTIVITY DEFINITIONS**

<i>Activity Name</i>	<i>Activity Number</i>	<i>Activity Definition</i>
Prepare IDE Business Case	0	<p>The process of developing a business-decision document that will identify new methods of performing business activities implementing IDE strategies and concepts. It includes four major activities: gather information about current business process (A1 - Gather Information); document the AS-IS business state so that a baseline may be established (A2 - Establish Baseline); identify methods for improving business processes and bundle those improvement opportunities into viable and logical solutions (A3 - Develop Alternatives); and assemble the findings for the decision maker as an orderly and formal exposition (A4 - Package Results). The business-decision document is called an <i>IDE Business Case</i> and is defined as:</p> <p>A business decision document that identifies alternatives and presents economical and technical arguments for implementing alternatives to achieve the stated business objective/imperative(s). It includes functional process descriptions, technical architecture descriptions, cost projections, action plans, measures of performance, and risk assessment for each alternative being considered. It is prepared from the perspective of the program manager, and its context is the IDE and the program's life-cycle.</p>
Gather Information	1	<p>The process of accumulating the information necessary to prepare an IDE Business Case. It includes developing an information gathering plan; requesting, compiling and cataloging the information; and filtering the information necessary to form a baseline. The information gathering plan should identify what information may be required, where to obtain that information, who will obtain the information, and a timetable for obtaining the information. Many types of information may be identified for compilation, including financial and technical information, as well as information about current business practices. Other information, not previously identified, may be required as well. Finally, the information is gathered and compiled into logical units.</p>
Develop Information Gathering Plan	11	<p>Using the business case model as a guide, identify information required, resources required, and sources of information by information type. Develop a plan of action and milestones for obtaining required relevant information.</p>
Compile Required Information	12	<p>The process of assembling the required information by issuing data calls, receiving information responses, and cataloging and categorizing the received information.</p>
Filter Baseline Information	13	<p>The process of reviewing the gathered data for reasonableness, completeness, accuracy, and materiality, and removing extraneous information that is not required to produce a</p>

<i>Activity Name</i>	<i>Activity Number</i>	<i>Activity Definition</i>
		baseline.
Establish Baseline	2	The process of developing a validated program/project baseline. This baseline consists of the current business state, as well as any approved changes (AS-IS Model). It includes decomposing the proforma model activities, assembling a geo-technical baseline, mapping the geo-technical baseline functions to the activity baseline mechanisms, tracing costs to activities, and validating the baseline.
Decompose Proforma Model Activities	21	The process of expanding the business case activity model to produce a program-specific activity model. The business case preparers will start with the provided proforma business case activity model. This activity model was derived using the Department of Defense (DoD) Enterprise Model, identifying activities within the DoD Enterprise Model that are within the context of the IDE, and decomposing those activities to a level just above program-specific activities. The business case preparers will take the proforma model and instantiate the model for their program-specific activities, so that activity costs may be identified.
Document Geo-Technical Baseline	22	The process of identifying and documenting the current technical infrastructure's capabilities and distribution of those capabilities, as well as any planned changes to the technical infrastructure, by geographical location. (This process bounds the baseline within the context of the IDE, and is one major difference between an IDE Business Case and an FEA.)
Map Geo-Technical Baseline Functions to Activity Baseline Mechanisms	23	The process of linking technical capabilities at geographical locations to the enabling mechanisms depicted in the AS-IS Activity Model. Performing this activity may drive out ideas for business process improvements.
Trace Costs to Activities	24	Using financial and workload information, and considering the instructions found in the FEA Guidebook or TurboBPR, allocate organizational/locational costs to the activities identified in the program's AS-IS Activity Model.
Validate Baseline Model	25	The process of determining and correcting any inconsistencies to form a correct baseline model. Performing this activity tests and authenticates the documented ABC baseline, geo-technical baseline, and activity baseline, and proposes revisions to each baseline as required to form a true representation of the AS-IS business state.
Develop Alternatives	3	The process of identifying the TO-BE state and identifying how to achieve the TO-BE state (where the TO-BE state is the program's target goal). This activity includes developing an understanding of the TO-BE state, determining improvement areas and developing implementation strategies to migrate to the TO-BE state, assessing relevant emerging technologies that could be used to achieve the TO-BE state, identifying initiatives

<i>Activity Name</i>	<i>Activity Number</i>	<i>Activity Definition</i>
		and aggregating the initiatives into alternatives, complete with action plans to achieve the TO-BE state.
Understand IDE End-State	31	Study all available documentation on IDE to gain an understanding of what IDE concept is trying to achieve (DoD's vision), and develop a cognitive comprehension of the TO-BE business state (the program's implementation of the DoD vision).
Identify Improvement Opportunities	32	Based upon a common understanding of the IDE, as well as the way business activities are currently performed, determine and document areas for improvement and identify improvement opportunities that move the current business processes toward IDE objectives. Develop strategies for implementing improvement opportunities through potential actionable changes of the program/project's business actions.
Assess Technologies	33	Gather, compile, filter, and catalog information about technologies that may be used to achieve the TO-BE business state. Assess the technical feasibility of the cataloged technologies to identify the existing and emerging technologies that may be used to achieve the TO-BE business state. Based upon the previously documented strategies for implementing improvement opportunities, determine the applicability of any existing or emerging relevant technologies that can contribute toward moving current business processes toward the TO-BE state.
Identify and Document Initiatives	34	Based upon the strategies developed, and assessing the applicability of existing and emerging technologies, identify and document initiatives that can be used to improve current business processes by moving those processes toward IDE objectives. Determine the impact and assess the risks of implementing the documented initiatives, and develop cost estimates for the implementing the identified initiatives.
Package Alternatives, Develop Action Plans	35	Considering the decision maker's requirements, aggregate the initiatives into one or more alternative packages. Provide action plans, cost estimates, risk assessments, and timetables for implementing the packaged alternatives.
Package Results	4	The process of incorporating the AS-IS information together with identified alternatives in a standard format for presentation to the decision maker. This also includes preparation of other presentation materials as required.
Prepare Business Case Document	41	Using the business case model as a guide, assemble information into the provided standard format. Review information and make necessary documentation changes prior to presenting document to decision maker.
Prepare Executive Summary	42	Describe for the decision maker the outcomes of the business case, covering the main points succinctly.
Prepare Presentation Materials	43	Assemble presentation materials in response to a specific request

<i>Activity Name</i>	<i>Activity Number</i>	<i>Activity Definition</i>
		and tailored to a specific audience and need.

## **APPENDIX B: ARROW DEFINITIONS**

Arrow Name	Arrow Definition
Program Manager, SMEs	Those persons whose expertise is required to validate the baseline model.
ABC Baseline	The activity costs and product costs derived by taking existing financial accounting information, workload information, and geo-technical baseline information, and tracing the costs to perform the identified relevant activities. The workload information includes who performs activities and how often the activities are performed.
Activity Information	The list and categorization of the major activities performed during the program.
Approved Changes	Those hardware, software, firmware, etc., items that have been sanctioned for use by the program, but are not presently part of the current geo-technical infrastructure. These items are included, along with the current geo-technical infrastructure, to form the geo-technical baseline.
Available Technology Information	The current published existing and emerging relevant technology information that should be reviewed to determine its applicability to contribute toward moving current business processes toward the TO-BE state.
Business Case Activity Model	The proforma model, provided to the IDE Business Case preparer(s). This activity model was derived from the DoD Enterprise Model by identifying activities within the DoD Enterprise Model that are within the context of the IDE, and decomposing those activities to a level just above program-specific activities.
Business Case Need	The internal or external decision that a business case for the program/project, within the context of the IDE, will be performed.
Common Understanding	The documented program/project's IDE end-state and its objectives, based upon DoD guidance. Technological, managerial, as well as functional persons must agree on the functionality and configuration of the program/project's IDE end-state.
Contractual Arrangements	Those existing and pending agreements that must be considered when identifying improvement opportunities and developing initiatives.
Data Calls	The formal requests for additional information that are transmitted during compilation of the needed information, and performed after the information sources are identified.
Decision Maker's Requirement for Additional Alternative(s)	The prerogative of the decision maker to modify presented alternatives, or recombine initiatives into new alternatives based upon the decision makers expertise.
DoD Guidance	The published rules, imperatives, models, templates, and procedures for preparing an IDE Business Case.
Existing Technical Infrastructure	The documentation that describes the program/projects existing Hardware and Software systems, and the use of those systems to perform data exchange.
FEA Guidebook	DoD published guide that shows how to prepare an FEA through practical examples and illustrations. Used by functional managers in meeting their responsibilities to justify local technology investments.
Finalized IDE Program/Project Business Case	The completed business decision document, presented in a standard format, and inclusive of an executive summary.
Financial Accounting Information	Those documents that contain filtered financial information required to prepare the business case.
Financial Data Sources	Those persons, systems, and ledgers that contain relevant financial data for the

Arrow Name	Arrow Definition
	preparation of the program/project IDE Business Case.
Geo-Technical Baseline	The program/projects technical foundation that consists of the existing technical infrastructure, location of the infrastructure, data exchange occurring within the infrastructure, and includes any approved changes.
IDE Business Case Model	The templates, spreadsheets, and presentation examples for preparing a business case.
IDE Program/Project Business Case	A business decision document that identifies alternatives and presents economical and technical arguments for implementing alternatives to achieve the stated business objective/imperative(s). It includes functional process descriptions, technical architecture descriptions, cost projections, action plans, measures of performance, and risk assessment for each alternative being considered. It is prepared from the perspective of the program manager, and its context is the IDE and the program's life-cycle.
Improvement Strategies	The scheme for bettering current business practices within the context of the IDE. These strategies are derived during the identification of improvement opportunities, and may be a plan to achieve the end goals.
Information Deficiencies	The lack of, or inadequacy of, program data provided to determine the AS-IS baseline.
Information Gathering Plan	The document that identifies what information is required, where to get it, and a timetable for acquiring the needed information.
Information System(s)	The computers and programs used to supply information to prepare an IDE Business Case.
Initiatives	The specific identified improvements (set of actions) derived from strategies and technology assessment.
PMO Personnel	Program Management Office personnel who will be involved in the preparation of the IDE Business Case. This may include subject-matter experts (SMEs).
Potential Technical Implementation Implications	The possibility that an identified improvement strategy may have some consequences to the technical infrastructure if realized. Those consequences must be addressed while assessing technologies.
Potential Technical Solutions	Those changes to the technical infrastructure that, if realized, will contribute to the efficiency of the activities identified for improvement within the improvement strategy.
Preparation Resources	All materials, items, manpower, etc., that may have a bearing upon the preparation of the IDE program/project business case.
Preparation Tools	The models, graphs, charts, templates, guides, and software packages used to prepare an IDE program/project business case.
Presentation Materials	The materials prepared in response to a briefing request to of the outcomes of the IDE Business Case, and tailored to a specific audience (stakeholders).
Prime Contractor Representatives	Those contractor personnel who will be involved in the preparation of the IDE program/project business case.
Program Data	The information specific to the program/project, obtained during the compilation of the raw technical, activity, and financial accounting information, and required to produce the baseline.
Program/Project AS-IS Activity Model	The result of decomposing the proforma model; the representation of the program/projects specific activities.
Program/Project IDE	The aggregated initiatives, including cost estimates, risk assessment, and action

Arrow Name	Arrow Definition
Alternatives	plans produced in a common format using a common timetable.
Program/Project Information	The aggregate of raw technical, activity, and financial accounting information.
Programmatic Goals and Objectives	The specific program goals and objectives, within the context of DoD's IDE.
Proposed Baseline Revisions	Those corrections, identified by the PMO staff and SMEs, that may be needed to be incorporated into the baseline and occur during validation of the baseline.
Raw Activity Information	The unfiltered information about actions that occur in support of a program/project. May include information pertaining to what the action is, why the action is performed, who is the action performed by, how often the action is performed, and at what location(s) the action is performed.
Raw Financial Accounting Information	The unfiltered pecuniary information related to the specific program/project for which the business case is being prepared.
Raw Technical Information	The unfiltered features and uses of the current hardware and software systems.
Relevant Program/Project Information	The information that has a significant bearing upon the program/project, and consists of the filtered activity, technical, and financial accounting information. This also includes workload data related to activities.
Request for Additional Information	A formal request to gather specific information that may be required to formulate initiatives or to aggregate initiatives into alternatives.
Request for Presentation Materials	The formal request to prepare business case outcome presentation materials for a specific audience.
Resource Mapping	The arrangement and relation of technical activities to their mechanisms.
Technical Feasibility	The likelihood that a technical feature may be accomplished.
Technical Information	The filtered features and uses of the current hardware and software systems relevant to the program/project's IDE Business Case.
Validated Program/Project Baseline	The accepted representation of the program/projects AS-IS state, agreed upon by PMO and SME personnel.
Workload Information	The time-phased, expected, overall output of a functional activity.

**APPENDIX C: ACRONYMS AND ABBREVIATIONS LIST**

<b>ABC</b>	Activity-Based Costing
<b>ATD</b>	Advanced Technical Demonstrations
<b>BPR</b>	Business Process Reengineering
<b>CALS</b>	Continuous Acquisition and Life-Cycle Support
<b>CIM</b>	Corporate Information Management
<b>DDI</b>	Director of Defense Information
<b>DII</b>	Defense Information Infrastructure
<b>DISA</b>	Defense Information Services Agency
<b>DoD</b>	Department of Defense
<b>EC</b>	Electronic Commerce
<b>EDI</b>	Electronic Data Interchange
<b>FAR</b>	Federal Acquisition Regulations
<b>FEA</b>	Functional Economic Analysis
<b>FPI</b>	Functional Process Improvement
<b>FPPI</b>	Functional Process Improvement Program
<b>GTBT</b>	Geo-Technical Baseline Tool
<b>ICOMS</b>	Inputs, Controls, Outputs, and Mechanisms
<b>IDE</b>	Integrated Data Environment
<b>LCMIS</b>	Life-Cycle Management of Information Systems
<b>PMO</b>	Program Management Office
<b>PPBS</b>	Planning, Programming, Budgeting System
<b>SAR</b>	Selected Acquisition Reports
<b>SDS</b>	Shared Data Solution
<b>SME</b>	Subject-Matter Expert
<b>SOW</b>	Statement of Work