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Rapid IT Acquisition

A New Model for Acquiring Government Information Technology

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This Advisory describes a new model for acquiring information technology and outlines guidelines and processes that can enable all agencies to achieve rapid delivery of solutions that meet user needs.

There is a new model for acquiring information technology (IT) that has the potential to significantly shorten the acquisition time line while also maintaining the focus on results. It has the potential to revolutionize the way the government acquires IT solutions.

The time is right for a new model. The government acquisition of IT capabilities has been plagued for years by schedule delays, cost overruns, and—most important—solutions that ultimately fail to meet customer needs. Commercial technology evolution cycles for communications, computers, and software average 18 months; fielding useful IT solutions in government can take an order of magnitude longer. Within the Department of Defense (DoD), senior military leaders have identified rapid delivery of IT solutions to meet urgent warfighting needs as a top priority,¹ and Congress in section 804 of the fiscal year (FY) 2010 National Defense Authorization Act mandated that DoD develop and implement a new acquisition process for IT systems. On the civilian side of the federal government, virtually every cabinet-level department has had one or more IT projects that have drawn unfavorable reviews.²

Over the past year, we engaged with the Deputy Assistant Secretary of Defense for Command, Control, and Communications, Intelligence, Surveillance, and Reconnaissance, and IT acquisition in DoD's Office of the Chief Information Officer (CIO) to flesh out an alternative model for IT acquisition based on a spring 2009 Defense Science Board report.³ Focused on taking the concepts from the report and turning them into a real-life, implementable acquisition process, it will, we believe, provide the springboard for DoD to quickly comply with the new congressional mandate. This *Advisory* describes the model and outlines guidelines and processes that can enable all agencies—both within and outside DoD—to achieve rapid delivery of information technology solutions that meet government users' needs.

What is causing the problems with government IT acquisition?

The issue is fourfold: uneven oversight, failure to codify best practices, a need for world-class acquisition professionals, and acquisition processes unsuited for IT acquisition.

1. Across government, there is an uneven set of oversight processes exercised by multiple oversight constituencies. Some oversight structures are so burdensome that they

slow programs and actually increase the probability of program failure, in some cases due to loss of confidence by the user that the program will ever deliver a useful capability.⁴ A snapshot of this type of oversight for a government IT program shows acquisition officials, CIOs, department-level officials, and even Congress making different demands for program documentation, status reports, and briefings as they exercise their acquisition oversight roles. At the other end of the spectrum, there are cases where agencies have virtually no oversight of complex IT programs, with predictable results.

2. The acquisition management processes that have proved successful in rapidly delivering effective IT solutions—the true “best practices”—have not been codified and institutionalized within government policy. Unfortunately, the details of failed programs get significantly more public attention than do the best practices and lessons learned from successful programs.

3. To address IT acquisition challenges, agencies need IT acquisition managers who are the best in the world.⁵ Although this *Advisory* will address this area only briefly, the need for more and better trained government acquisition professionals has received widespread attention.

4. IT tends to have different characteristics from many other items the government acquires, which means that the typical government acquisition processes are not optimum for IT procurements. For example, the lengthy and deliberate processes used to acquire weapon systems in DoD, Coast Guard ships for the Department of Homeland Security, or a nuclear fusion test laboratory for the Department of Energy would be not be good models for acquiring tax payment processing systems or law enforcement fugitive databases.

How exactly do IT acquisitions differ from other types of procurements?

The underlying differences in IT that distinguish it from other products and services include:

- The technology for information systems exhibits continuous and very rapid evolution.
- There are an increasing number of commercial off-the-shelf (COTS) components available.
- Users' requirements for an information system evolve as users gain experience with early capabilities.
- Most IT systems or services are components of a larger “system of systems.”

These differences must be accommodated in the acquisition processes government organizations employ for the IT acquisition process to be effective. Today, to the ex-

tent that government organizations have well-established processes for acquisition, they are tailored for large platforms (ships, tanks, laboratories, buildings) and generally lack the agility, flexibility, and responsiveness necessary for technology solutions. In his July 2009 testimony to the Acquisition Reform Panel of the U.S. House of Representatives, Timothy Harp, deputy assistant secretary of defense, noted that the DoD “weapons system acquisition process is optimized to manage production risk and doesn't really fit information technology acquisition that does not lead to significant production.”⁶

Is there a better model for IT acquisition?

We have developed a straightforward set of guidelines for rapidly acquiring government IT that builds on best practices and lessons learned from government and industry. Tailored specifically for IT acquisitions, this model is built on agile development, test, and contracting methods to achieve rapid delivery of products.

What are the characteristics of this improved model?

Six principles underpin the new IT acquisition model:

1. Divide requirements for larger IT solutions into smaller projects.
2. Use acquisition “process templates” that recognize the differences among types of IT efforts.
3. Use CIO and acquisition governance authorities as well as end-user approval for key decisions in the IT acquisition process.
4. Employ common IT “platforms” as the infrastructure target for newly fielded capabilities.
5. Provision and employ an enterprise-wide systems engineering, test, and integration capability.
6. Use portfolio management-like processes for project initiation and funds allocation.

We discuss each principle in turn.

Principle 1: Divide Requirements

The new model focuses on small, incremental projects to drive rapid fielding of user capabilities. At the beginning of a program or project, IT requirements are defined at a high level, with more detailed requirements evolving throughout the project.

There are many examples in government where a small team of users very quickly and successfully developed an IT solution to meet a critical need. For example,

deployed soldiers have developed software to better display the geographic location of friendly forces on a battle field. Such success stories reveal two important lessons. First, end users who embark on IT development efforts start with modest high-level objectives, and then get the initial capabilities to meet those objectives into operational use quickly. Second, the actual end users know best their real operational needs.

Generalizing from these lessons learned, the proposed acquisition model uses small IT projects and interactively evolves the results of these smaller efforts into the larger system capability. The objective is to deliver and field operational capabilities in 6-12 months with adequate oversight and documentation. In addition, by employing agile software development methods where the developer and user are linked almost continuously, the IT project developer, the knowledgeable user, and the tester are able to work together on each increment of capability. This results in rapid delivery of useful capability and avoids surprises in the fielded system. Moreover, as the increments of capability are fielded, continuous user feedback from the operational environment is used to tailor the requirements and priorities for successive increments.

Because the project increments will be fielded into a “system of systems” environment, adherence to an overall operational and systems architecture and enforcement of interoperability standards is key for each increment.

Smaller projects permit less overhead, less risk, and more rapid fielding. Rapid fielding of increments and use of agile development methods helps ensure that the program is meeting user needs.

Principle 2: Use Acquisition “Process Templates”

As IT acquisition projects grow increasingly complex, the risks, acquisition activities, and oversight needs of individual programs grow more diverse. For example, for an IT acquisition project focused on software development, a key risk area is ensuring that meaningful user requirements are communicated to developers. The acquisition development and oversight processes must be tailored to ensure this is done properly. On the other hand, for an acquisition project focused on purchasing COTS IT components, a key risk area is ensuring a full understanding of the commercial IT product marketplace and commercial IT business models, and the appropriate acquisition processes must recognize and adapt to these needs.

Employing predefined acquisition process templates that have been tailored for use in different types of IT projects

The “Time Box” Concept

To reinforce the objective of rapid delivery and smaller efforts, each project activity, whether project execution or project oversight, should have predefined time limits (a so-called time box) for completion. Imposing time boxes on all activities helps to ensure the acquisition effort does not get bogged down and will trigger oversight action if time box thresholds are missed.

ects (1) ensures that complex IT projects focus on those activities that are important for the project type, and (2) increases the speed of acquisition coordination and approval cycles.

For the new IT acquisition model, four process templates have been developed that leverage best practices for four types of IT acquisition programs and the inherent risks for each. Each template identifies the important acquisition activities needed to address specific risk areas, as well as the key decision points and the information needed to support the decision points. The templates define specific project planning activities, oversight decision points tied to risks, documentation needs, and decision event exit criteria.

The four IT acquisition process templates are:

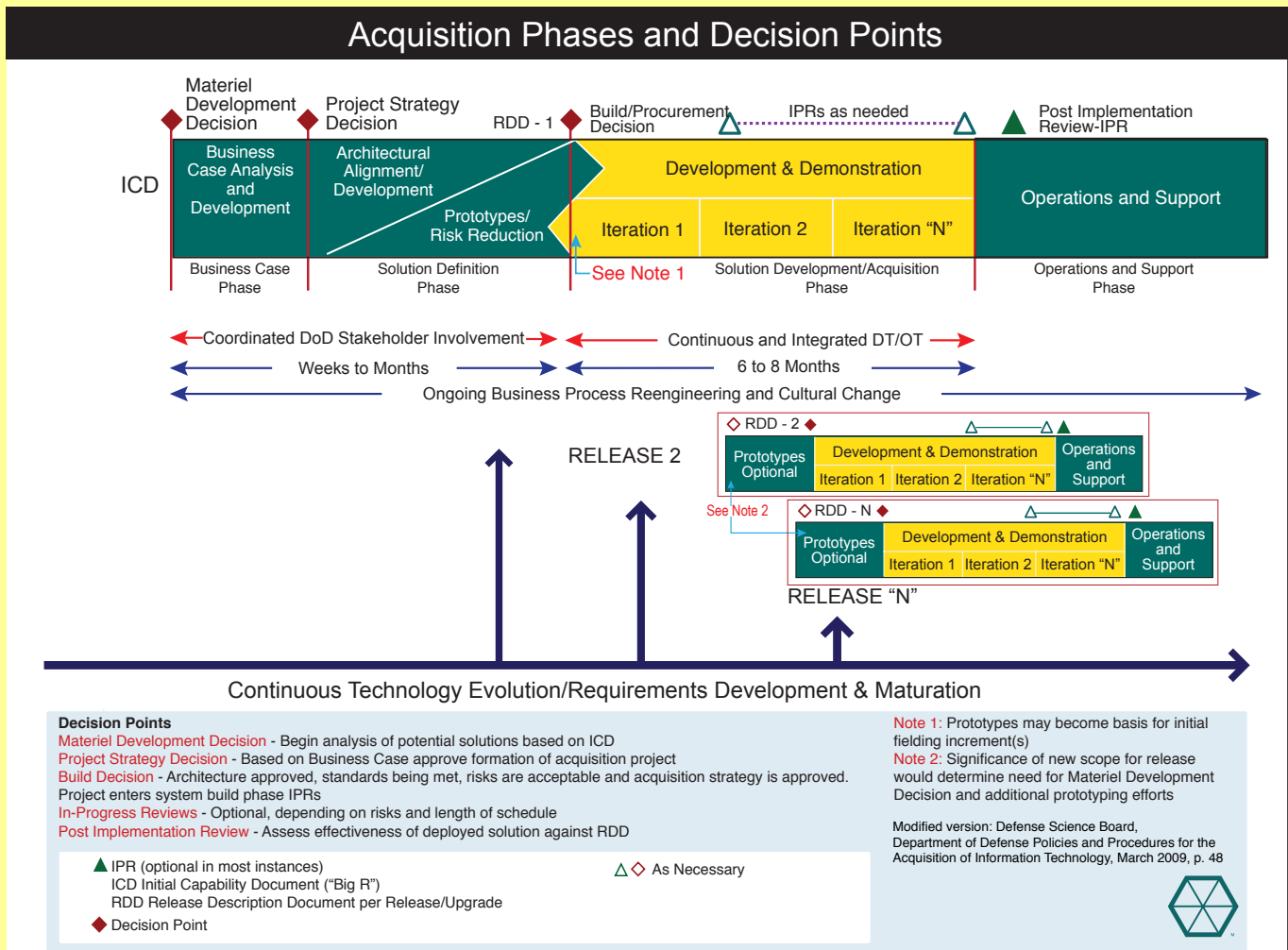
- Process Template 1: Application Software Development & Integration—for projects involving software development and software integration
- Process Template 2: COTS Hardware/Software—for the purchase of nonmodified commercial end items
- Process Template 3: Integrated COTS Capability—for projects requiring focused systems engineering to integrate a set of commercially provided hardware and/or software components
- Process Template 4: Commercially Provided IT Services—for efforts to procure IT services

Figure 1 on page 4 shows a top level diagram of Process Template 1.

Principle 3: Use CIOs, Acquisition Governance Authorities, and End Users for Key Decisions

The recommended governance process in the new IT acquisition model focuses on three key governance areas: requirements definition, oversight of program management processes, and management of the use of information technologies. It relies on a recognition among the

Figure 1: Process Template 1



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Process Template 1 is intended for use in application software development and integration projects, so it addresses close interaction with users in prototyping and iterative development using agile methods. Top-level objectives and mission capability requirements for a program are defined in the initial capabilities document (ICD). Requirements are then baselined in a release description document (RDD) for each incremen-

tal release, with a release consisting of multiple agile development iterations. By following the template and establishing appropriate time boxes, a software development project would be expected to operationally deploy initial iterations of developed capability within a small number of months (i.e., within the time box). The requirements for each new release consider the results of prior releases and the user's current opera-

tional priorities. Acquisition oversight is provided through several decision points leading up to a build decision, as well as periodic in-progress reviews (IPRs). A more thorough description of each of the templates with details on processes, acquisition oversight decision points, and documentation can be found on pages 8 - 18 of this Advisory.

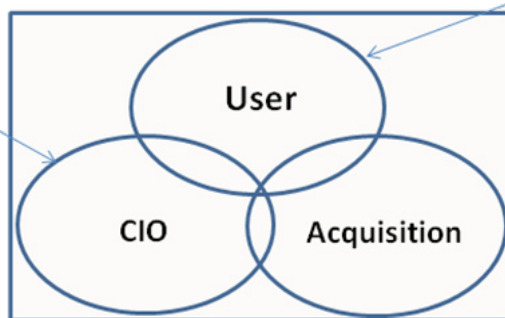
government acquisition community, the CIO community, and the user community of the need to form an effective governance partnership for IT acquisition efforts to ensure the necessary knowledge and skills are brought together to provide disciplined and knowledgeable oversight of IT

acquisition projects. Representatives of each of the three communities—user, acquisition, and CIO—will bring essential authorities and accountability to the oversight process. The acquisition community provides program management and contracting expertise; the CIO community

Figure 2: IT Acquisition Governance Partnership Roles

CIO Strategy and Governance

- Policy/Strategy
- Architecture
- Standards
- IT Infrastructure
- Compliance/Certs



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User Needs

- Requirements Refinement
- Capability Trade-offs
- Priorities
- Acceptable Performance

Acquisition Oversight and Management

- Buying Strategy
- Contracting
- Program Management

provides IT architecture, interoperability, standards, and information assurance expertise; and the user community brings expertise and understanding of user needs and priorities to make necessary user capability, schedule, and project cost trade-offs. Figure 2 summarizes the responsibilities of each community.

In the new IT acquisition model, co-chairs formally appointed from each of the three communities conduct IT acquisition project oversight. Qualified representatives from the user, acquisition, and CIO communities are given authority to make timely decisions and the responsibility for ensuring full transparency of project status and key decisions. This governance approach is a cornerstone of the proposed model and helps to ensure that the right knowledge and authorities are available to make the decisions necessary to keep an IT project moving, to redirect it if needed, or to terminate a project when appropriate. The oversight co-chairs, operating as a team and with appropriate advisors from various functional disciplines such as test and finance, are empowered and accountable for decisions necessary to ensure rapid delivery of operationally effective and supportable IT capabilities.

Principle 4: Use Standard IT Platforms

For many IT acquisition programs, one of the first tasks for the project team is to select suitable hardware and associated software to be used in the project. The platform technology typically uses a combination of commercially available technologies that are assembled and configured by systems integrators for each program. The cumulative impact of this practice is that most government organizations have a large variety of distinctly different hardware and software platforms that must be properly configured, tested, and managed throughout the life cycle of the project or program. This approach leads to delays as each program specifies, purchases, and qualifies its unique platform for security, interoperability and stability; is expensive, with significant duplication and unnecessary effort; and complicates security efforts because of the large number of unique platform configurations.

The focus of the new model is to provide direction on the mission-unique IT software or COTS capabilities that support the needs of the government organization and to do this rapidly. This is achieved through using prequalified and security-certified standard IT platforms that are provisioned in advance for on-demand use by government projects. These prequalified platforms implement government IT standards, provide necessary security, can be provisioned for the project quickly, and are able to be operated efficiently. Standard platforms are immediately available to support the development, test, and runtime application infrastructure. This enables government IT projects to rapidly take advantage of the benefits of agile development methods or to rapidly field capabilities that use state-of-the-art COTS IT products. It also avoids risky purchasing of such platform capability until needed.

Use of properly qualified government or commercially provided “cloud computing” development, test, and production services could be a means to achieve the benefits of this guideline, as well. CIOs of larger government organizations also may decide to establish their own suites of standard platforms for use within their organizations.

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Principle 5: Employ an Enterprise-wide Test and Integration Capability

Increasingly, government organizations must link many separate functions and processes to better meet citizen or government users’ expectations for seamless services.

The benefits of integrating separately developed IT systems can be enormous. For example, linking the law enforcement capabilities within the Department of Homeland Security or integrating the supply chain systems supporting DoD is essential to mission success. Unfortunately, current government acquisition processes most often do not address these integration and interoperability objectives until an IT project is already developed and is in the process of being fielded.

The rapid IT acquisition model calls for establishing organization-wide systems engineering, test, and integration capabilities (TIC). TIC provides a way to ensure integration of separately developed projects and to ensure interoperability before fielding. Moreover, it provides a way to reduce project cost and schedule by eliminating the need for each IT project to develop and maintain a distinct test and evaluation facility.

TIC would be used by all IT acquisition programs in an organization for conducting prototype evaluations or demonstrating candidate technologies prior to a build or procurement decision. It also would be used to test newly developed or procured capabilities in a “system of systems” operational-like environment prior to fielding. This would ensure interoperability, compliance and compatibility with established IT architectures and standards, and compatibility with other systems and data that exist within the target operational environments. To achieve this objective, TIC would include representative operational data sets and simulation/stimulation tools to permit evaluations using realistic and stressful operational environments. When fully established, the TIC will provide a single environment for conducting engineering evaluations and prototypes, as well as an environment for developmental, operational, and security testing of newly developed or acquired IT capabilities.

A government department or agency could establish an initial TIC by linking existing test and evaluation facilities being supported by different organizations or IT programs. Over time, as the department or agency TIC matures, it can be linked with other government agency or departmental TICs to address cross-government integration.

Principle 6: Use Portfolio Management-like Processes for Project Initiation and Funding Allocation

For many government organizations, acquiring funding even for a high-priority IT project can take several years. With information technology advancing a generation every 18 months, and with many mission-critical functions

depending on improved IT solutions, a rapid IT acquisition process needs an equally rapid funding process.

To achieve a rapid acquisition process, the new model recommends a portfolio management process for allocating funding during the execution year. This portfolio process permits trade-offs among competing needs and capabilities, leading to more effective use of government IT funds. By budgeting and managing the execution of funding tied to a mission outcome, rather than a specific program or project, agencies can respond to technology advances, emerging and urgent requirements, and the progress or lack of progress within ongoing IT acquisition projects in a rapid and flexible manner.

The concept as envisioned is similar in some respects to DoD’s use of working capital funds, where funds are allocated to IT projects annually after examination of priority needs and project progress just prior to funds execution. DoD also uses a similar process to fund aircraft avionics maintenance. In both of these cases, funding is allocated to IT projects in a disciplined and fully transparent manner based on evolving user requirements and acquisition project progress. With this approach, cost, schedule, and capability trades are synchronized with user needs and technology cycles when IT projects are initiated. This portfolio management-like approach eliminates the requirement for full funding of the entire IT effort at project initiation in favor of incremental funding for each release, consistent with guidelines 1 (smaller projects) and 2 (acquisition process templates).

How could a rapid IT acquisition process be implemented?

The National Defense Authorization Act for FY2010 (section 804) includes a provision for DoD to develop and implement a new acquisition process for IT systems.⁷ This new process is to be based on the March 2009 Defense Science Board⁸ report and include the following:

- Early and continual involvement of the user
- Multiple, rapidly executed increments or releases of capability
- Early, successive prototyping to support an evolutionary approach
- A modular, open-systems approach

This authorization for DoD to develop and implement a new acquisition processes for rapidly acquiring IT capabilities provides an excellent opportunity to embrace the six guidelines for rapid acquisition described in this *Advisory*. The principles extend the concepts identified in the Defense Science Board report and could form the basis for a

rapid IT acquisition process that would be codified in DoD policy. In implementing the rapid IT process, initial pilots could be selected based on their willingness to adopt the new model and with the understanding that full transparency would be required. DoD oversight at a very senior level would ensure that the selected projects for initial pilots embrace the guidelines described above. This oversight process also would collect and evaluate appropriate metrics for progress reporting to Congress, as well as help in fine-tuning the rapid IT acquisition guidelines based on lessons learned from the initial implementations.

Perhaps the most difficult aspect of implementing a new acquisition process is changing a culture that has grown accustomed to using the current ineffective but well understood processes. A robust training program on the new guidelines that also addresses culture change is highly recommended.

While not mandated in legislation, it is appropriate for nondefense organizations also to embrace the new model for IT acquisition and adopt the six guidelines for rapid acquisition. The Office of Management and Budget may wish to provide appropriate direction to guide government

agencies to take advantage of this new model. As with DoD, it is recommended that pilot implementations and a focused culture change management program be integral parts of implementing the rapid acquisition model for government IT systems.

Conclusion

Many studies have highlighted the need to change the acquisition process for IT. Through implementation of the principles outlined in this *Advisory*, the government can achieve rapid acquisition of useful IT while providing needed and effective oversight. The guidelines embody the best practices of industry, as well as lessons learned from successful and unsuccessful experiences within government. Because the guidelines reflect a significant departure from current government acquisition process in many areas, training of both government and industry personnel will need to be a high priority. Moreover, senior leaders across government will need to provide visible and continued support for the culture change that will be necessary for successful implementation of the new model. ♦

Endnotes

1 Antonie Boessenkool, "DoD IT Procurement Too Slow: Cartwright," *Defense News.com*, March 4, 2009; <http://www.defensenews.com/story.php?i=3975151&c=AME&s=TOP>.

2 See, for example, "Testimony of Elaine C. Duke, deputy under secretary for management, and James L. Taylor, deputy inspector general, Department of Homeland Security, before the House Committee on Oversight and Government Reform, Subcommittee on Government Management, Organization, and Procurement, September 15, 2009; <http://governmentmanagement.oversight.house.gov/story.asp?ID=2584>; Government Accountability Office, "HUD needs to Strengthen its Capacity to Manage and Modernize Its Environment" (GAO-09-675), Government Accountability Office, July 31, 2009; <http://www.gotovao.com/index.cfm?action=comment&id=0480025173000443>; "Audit of VA's Management of Information Technology Capital Investments" (Report No. 08-02679-134), Department of Veterans Affairs Office of Inspector General, May 29, 2009; <http://www.gotovao.com/index.cfm?action=comment&id=0490024099000443>; "Information Technology: FBI Is Implementing Key Acquisition Methods on Its New Case Management System, But Related Agency-wide Guidance Needs to Be Improved" (GAO-08-1014), Government Accountability Office, September 23, 2008; <http://www.gotovao.com/index.cfm?action=comment&id=0480004981000443>; "EPA Personnel Access and Security System Would Benefit from Improved Project Management to Control Costs and the Timeliness of Deliverables" (Report No. 08-P-0271), Environmental Protection Agency Office of the Inspector General, September 22, 2008; <http://www.gotovao.com/index.cfm?action=comment&id=0490004986000443>.

3 "Department of Defense Policies and Procedures for the Acquisition of Information Technology," Defense Science Board, March 2009; <http://www.gotovao.com/index.cfm?action=comment&id=0500022961000443>.

4 See, for example, "Defense Acquisitions: Perspectives on Potential Changes to Department of Defense Acquisition Management Framework (GAO-09-295R), Government Accountability Office, February 27, 2009; <http://www.gotovao.com/index.cfm?action=comment&id=0480022818000443>.

5 Katherine McIntire Peters, "Pentagon to Hire Thousands of Employees, Cut Contractors," *Government Executive.com*, April 6, 2009; http://www.govexec.com/story_page.cfm?articleid=42440&dcn=todaynews.

6 "Statement by Timothy J. Harp, Deputy Assistant Secretary of Defense for Command, Control, and Communications, Intelligence, Surveillance, Reconnaissance and Information Technology Acquisition, before the US House of Representatives Defense Acquisition Reform Panel of the Committee on Armed Services on 'Challenges to Effective Acquisition and Management of Information Technology Systems,'" July 9, 2009; <http://www.gotovao.com/index.cfm?action=comment&id=0650024737000443>.

7 The conference report to accompany the Fiscal Year 2010 National Defense Authorization Act (H.R. 2647) passed by House on October 12 and the Senate on October 23, clearing the measure for the President's signature.

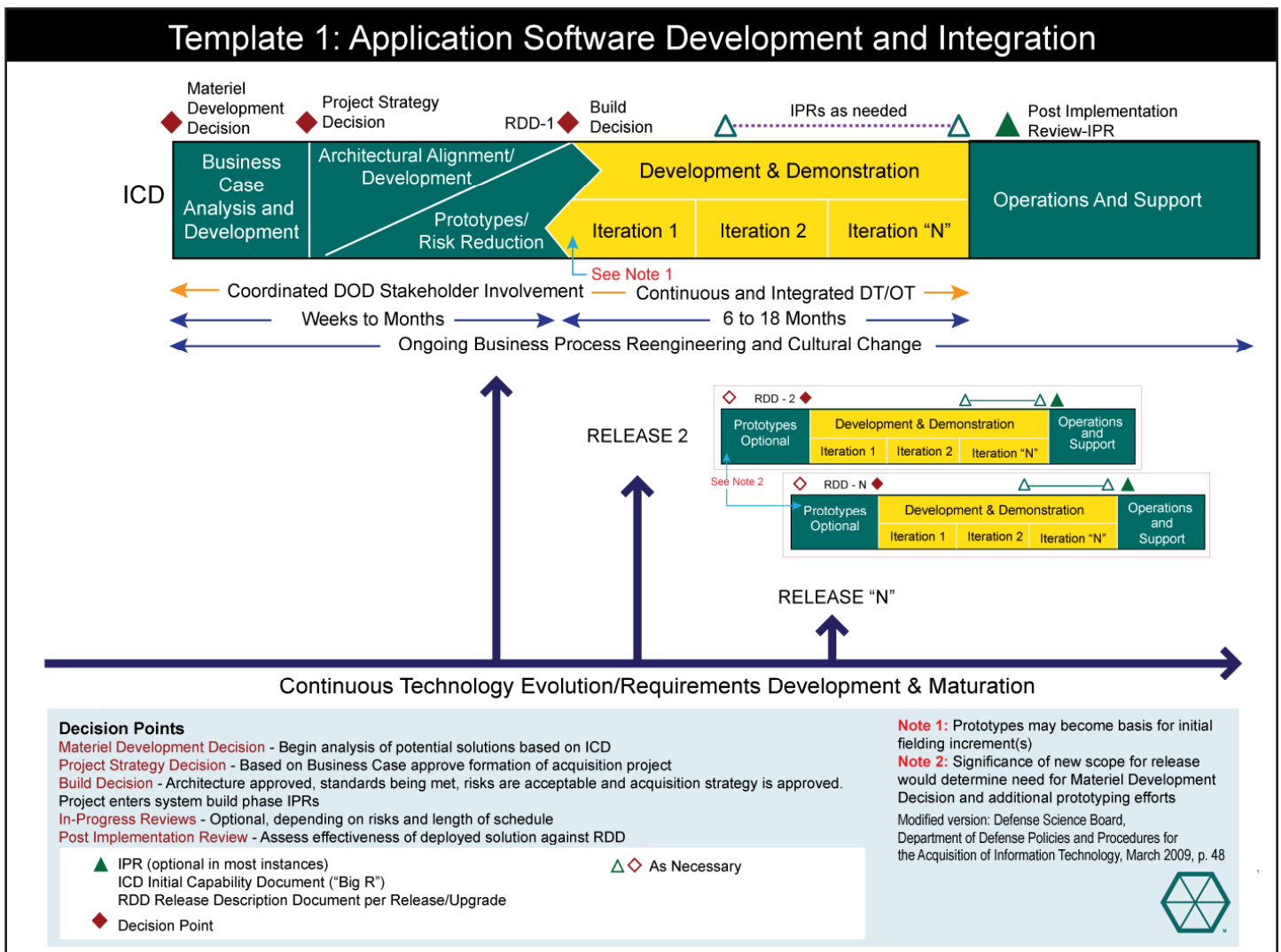
8 "Department of Defense Policies and Procedures for the Acquisition of Information Technology," Defense Science Board, March 2009; <http://www.gotovao.com/index.cfm?action=comment&id=0500022961000443>.

Risks, Key Decisions & Governance for IT Process Templates

Process Template	Project Risks	Key Decisions	Governance Approach
1 – Application Software Development and Integration	<ul style="list-style-type: none"> • Requirements not clear and/or not stable • Skills of development/user team • Technical complexity of solution • Requirements necessitate innovation or have inherent complexity • Meeting urgent, critical mission requirement • Attempting to build too big a portion in one release/increment 	<ul style="list-style-type: none"> • Planned size and timing of fielding (how to divide requirement for development as releases/increments, as well as timing—time box—for delivery) • Sequence of iterations to bring useful mission/business value, moderate risk • Accelerate, change focus (requirements/technology), or kill project 	<ul style="list-style-type: none"> • Heavy end-user involvement in decisions and development with time-boxed releases • Governance roles • User – requirements, readiness to deploy • Acquisition – contracting strategy, project manager oversight • CIO – architecture, standards, integration/interoperability, reuse • In-progress reporting, joint reviews (customer, project manager, and contractor) and metrics
2 – COTS Hardware of Software	<ul style="list-style-type: none"> • Ability of COTS to meet user needs • Ability to operate in DoD environment • Meeting DoD security requirements • Life-cycle cost/management (including technical obsolescence) • Proprietary considerations, data, supplier lock-in • Leverages strategic enterprise agreements 	<ul style="list-style-type: none"> • Ensure program is following and leveraging COTS market trends • Acquisition strategy – Best approach to procure product (e.g., GSA schedule, existing federal/DoD contracts, commodity purchase, lease, managed service, “just in time” contracts, or advanced buy) • Adequate mitigation of project risk 	<ul style="list-style-type: none"> • CIO and procurement communities are key in decisions involving IT infrastructure • CIO – architecture, standards, integration/interoperability, security • User has key role in determining suitability for mission/business systems
3 – Integrated COTS Capability	<ul style="list-style-type: none"> • Ability to meet initial and evolving requirements • Engineering and integration while preserving nonmodified COTS products • Life-cycle support approach, costs, management • Meeting DoD security requirements • Proprietary considerations, data, supplier lock-in • Leverage strategic enterprise agreements 	<ul style="list-style-type: none"> • Type of contractor selected to do integration (original equipment manufacturer, integrator) • Life-cycle support tail • Buy as a managed service or as an integrated product • Adequate mitigation of project risk 	<ul style="list-style-type: none"> • Acquisition – Provide/oversee engineering efforts • CIO and procurement communities are key in decisions involving IT infrastructure • CIO – architecture, standards, integration/interoperability, security • User has key role in determining suitability for mission/business systems
4 – Commercially Provided IT Services	<ul style="list-style-type: none"> • Ability to meet initial and evolving requirements • Scale of DoD environment • Properly incentivizing service provider as business environment, technology, and requirements evolve 	<ul style="list-style-type: none"> • Contracting structure to address key risks (e.g., changing requirements/technology/market/DoD environment) • Monitoring contract performance and business model (incentives, SLAs, competition/work share adjustments, etc.) over time 	<ul style="list-style-type: none"> • CIO and procurement are key in decisions involving IT infrastructure • User has key role in determining suitability for mission/business systems

Process Template #1: Application Software Development and Integration

- Acquisition program divided into multiple projects called releases
 - ▶ Initial capabilities document requirements (Big R) allocated to multiple releases with defined requirements (using a release description document)
 - ▶ Releases contain multiple delivery increments
- Projects authorized on a release basis with the following constraints:
 - ▶ Constrained schedule and funding (release fully delivered in approximately 18 months; funding commitment for release)
 - ▶ Maximum use of COTS hardware/software products and integrated COTS capabilities
- Projects employ “agile” development and contracting methodologies
- Projects select an approved IT platform as the target environment
- Project capability tested in a DoD test and integration capability and fielded as quickly as possible (6-12 months)
- Feedback from initial fielding guides requirements for subsequent projects or project increments
- Use a portfolio-like funding mechanism—funding committed incrementally



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Process Template #1 – Project Activities for Software Development & Integration

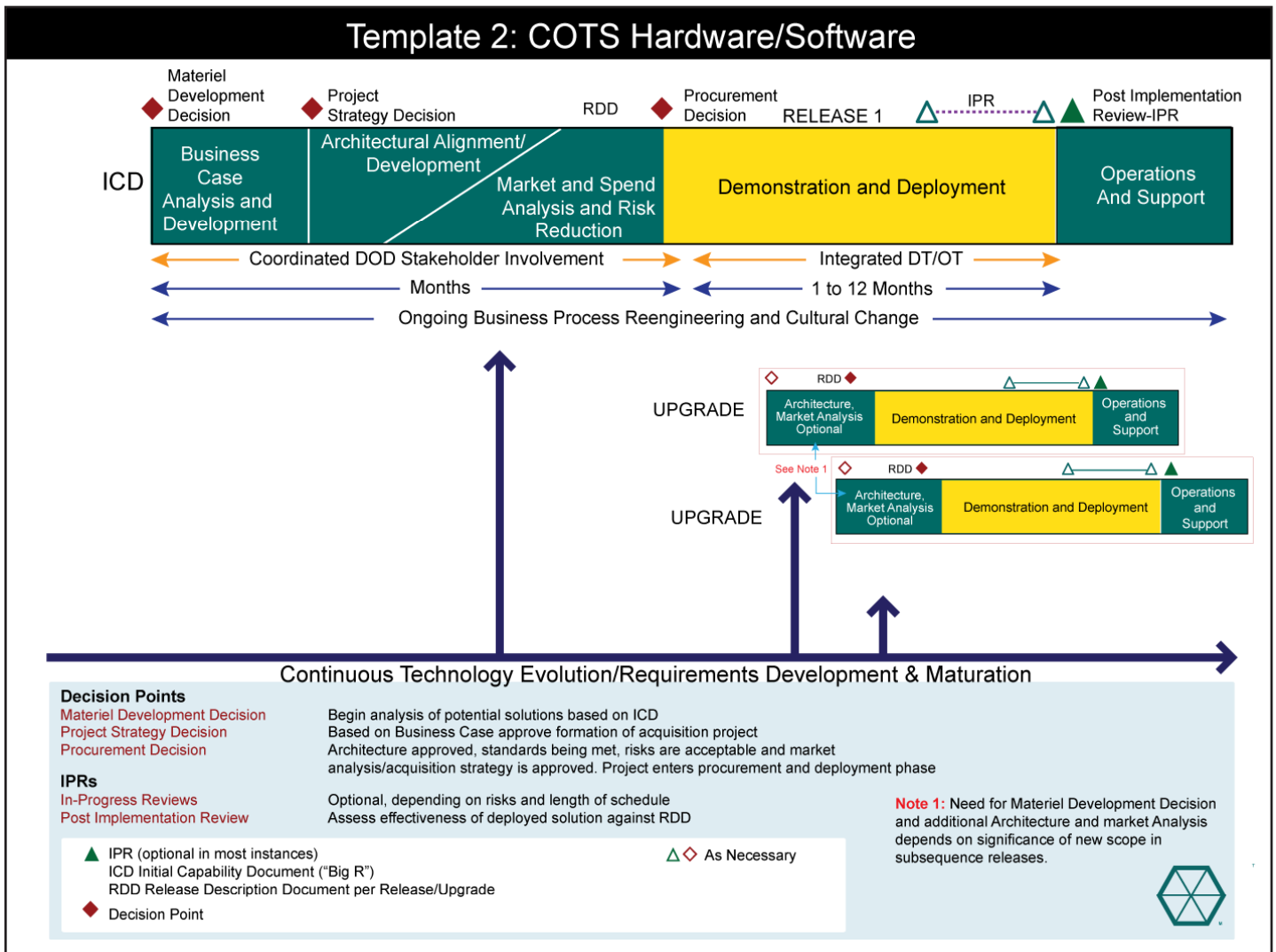
	Key Risks	Information Required	Entry Criteria	Exit Criteria	Decisions
Material Development Decision	<ul style="list-style-type: none"> Objectives, requirements not clear, stable, or overly detailed Ability to meet urgent or critical mission requirement 	<ul style="list-style-type: none"> Prioritized, top-level requirements approved by user authorities 	<ul style="list-style-type: none"> Approved initial capabilities document 	<ul style="list-style-type: none"> Project organization assigned and funding identified to begin project analysis Tailored guidance for business case 	<ul style="list-style-type: none"> Approval to begin business case phase and related analyses of potential solutions Identify time frame for project strategy decision event (time box approach-target should 1-3 months)
Project Strategy Decision	<ul style="list-style-type: none"> No clear strategy to meet user needs Alternatives to meeting user needs not fully evaluated 	<ul style="list-style-type: none"> Top-level strategy for executing project Analysis that supports establishing an acquisition program Description of user needs in a statement of objectives level document 	<ul style="list-style-type: none"> Business case Alternatives analysis Market research Cost vs. benefits Project strategy with supporting analysis (Optional) Acquisition strategy (if the acquisition community has defined an acquisition approach (e.g., user of IDIQ contract for both prototypes and agile development efforts 	<ul style="list-style-type: none"> Approved business case Approved project strategy for solution definition phase Established criteria and timing for build decision 	<ul style="list-style-type: none"> Decision on which acquisition template (1-4) to use Approval to and initiate enter solution development phase and begin architecture and prototype efforts Identify oversight anticipated (e.g., IPRs), as well as timing of IPRs, initial set of program metrics, and build decision event (time box approach-target should be 1-6 months)
Build Decision	<ul style="list-style-type: none"> Risks have not been sufficiently explored/reduced Release requirements not scoped or agreed to with users Project planning not sufficient No clear strategy to use common infrastructure and available COTS Inadequate team experience with agile development processes/methods and tools Security not addressed properly No incentives to build for reuse and sharing Inadequate documentation for reuse/life cycle support 	<ul style="list-style-type: none"> User approved requirements for release Acquisition strategy Clinger-Cohen Act compliance Identification of common IT platforms that will be employed Overall enterprise architecture Security architecture for hosted applications 	<ul style="list-style-type: none"> Completed requirements description document for the release Prototypes/analysis results Program implementation plan Overall program plan for all releases Cost, schedule, performance for Release 1 Strategy for incremental development Architecture Data strategy Developmental and operational test plan Documentation strategy Acquisition strategy (or an update for a prior strategy) 	<ul style="list-style-type: none"> Approved implementation plan for solution acquisition phase implementation Developmental and operational test plan Approved data strategy Approved documentation strategy Approved acquisition strategy Approved program baseline: cost, schedule, performance (including time box parameters for release and increments) Selection of IT platform 	<ul style="list-style-type: none"> Approval to enter solution acquisition phase Baseline approval Certification of Clinger-Cohen Act compliance Limits of authority to field increments Agreement on timing of releases and increments (time box concept with expectation that release is completed within approximately 6-18 months) Agreement on process for prioritization and deferral of requirements during release Timing/focus of IPRs, identification of metrics to be employed to measure progress

<p>Postimplementation Review</p>	<ul style="list-style-type: none"> • Solution not meeting user needs in fielded environment • User expectations and business value not met • User requirements have evolved 	<ul style="list-style-type: none"> • Performance data regarding operational use of fielded solution 	<ul style="list-style-type: none"> • Solution has been in use for sufficiently long period of time (months) • Objective and subjective data regarding performance of fielded solution 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Report (as appropriate) to user community and oversight bodies • Validate business value and user satisfaction • Provide input to subsequent releases/ increments
<p>In Progress Reviews (IPRs) (Optional)</p>	<ul style="list-style-type: none"> • Project not making appropriate progress • Issues need resolution 	<ul style="list-style-type: none"> • Program status (cost, schedule, performance) • User feedback from operational use of prototypes/ increments • Identification of issues (user, acquisition, CIO, contractor) 	<ul style="list-style-type: none"> • As directed by decision authorities 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Expand, change focus, or kill program as appropriate

Process Template #2: COTS Hardware and Software

- Employ commercial purchasing approaches
 - Employ best practices of commercial purchasing organizations (Commodity* Councils/strategic sourcing organizations)
 - Leverage commercial market forces, buying power, and standards
- Strategic sourcing/Commodity Council approach
 - Develop commodity strategy to address full product life cycle (from needs analysis to product disposal)
 - Conduct strategic analysis of product area (buying trends and trends, needs analysis, socioeconomic objectives, energy efficiency, etc.)
 - Construct/award contract(s) tied to product-specific strategy
 - CIO governance processes used to guide implementation and purchasing
 - * Enterprise IT standards, architectures, and life-cycle management
 - * Budgeting and/or budget oversight at enterprise level
 - * Possibly mandatory use enforcement

*Commodity products include pure off-the-shelf devices and software conforming to industry standards (e.g., PCs, servers, shrink-wrapped software)



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Process Template #2 – COTS Hardware/Software

	Key Risks	Information Required	Entry Criteria	Exit Criteria	Decisions
Material Development Decision	<ul style="list-style-type: none"> Requirements not sufficiently defined, not stable, or overly detailed Ability to meet urgent or critical mission requirement 	<ul style="list-style-type: none"> Prioritized, top level requirements approved by user authorities 	<ul style="list-style-type: none"> Approved initial capabilities document 	<ul style="list-style-type: none"> Project organization assigned and funding identified to begin project analysis 	<ul style="list-style-type: none"> Approval to begin business case phase and related analyses of potential solutions Identify time frame for project strategy decision event (time box approach—estimated time to complete 1-3 months)
Project Strategy Decision	<ul style="list-style-type: none"> No clear strategy to meet user needs Alternatives to meeting user needs not fully evaluated 	<ul style="list-style-type: none"> Top-level strategy for executing project Analysis that supports establishing an acquisition program 	<ul style="list-style-type: none"> Business case Alternatives analysis Market research Cost vs. benefit Project strategy with supporting analysis (Optional) Acquisition strategy (for example if contracts that will be used have already been established) 	<ul style="list-style-type: none"> Approved project strategy Approved business case Approved plan for solution definition phase Criteria for procurement decision 	<ul style="list-style-type: none"> Decision on which acquisition template (1-4) to use Decision to enter solution definition phase Approval to begin architecture and prototype efforts Identify oversight anticipated (e.g., IPRs), initial program metrics, as well as timing of IPRs and procurement decision event (time box approach—expected to be 1-4 months)
Postimplementation Review	<ul style="list-style-type: none"> Risks have not been sufficiently explored/reduced Release requirements not scoped or agreed to with users Project planning not sufficient 	<ul style="list-style-type: none"> User approved requirements for release Acquisition strategy Clinger-Cohen Act compliance Analysis of market and user needs and recommended implementation approach Enterprise architecture 	<ul style="list-style-type: none"> Completed requirements description document for the release Market and spend analysis Implementation plan Overall plan for all releases Cost, schedule, performance for specific release Architecture Strategy for initial fielding Test plan Results of prototypes/analysis efforts Contracting and buying strategy 	<ul style="list-style-type: none"> Approved implementation plan for solution development phase implementation Approved contracting/buying strategy Approved program baseline: cost, schedule, performance (including timing of initial fielding and full fielding—time box approach) 	<ul style="list-style-type: none"> Approval to enter solution development phase Baseline approval Clinger-Cohen Act compliant Limits of authority to field Timing/focus of IPRs Timing of fielding (time box approach—expected to be 1-6 months) Contracting/buying strategy approval Timing of post implementation review
In Progress Reviews (IPRs) (Optional)	<ul style="list-style-type: none"> Solution not meeting user needs in fielded environment User expectations and business value not met User requirements have evolved 	<ul style="list-style-type: none"> Performance data regarding operational use of fielded solution 	<ul style="list-style-type: none"> Solution has been in use for sufficiently long period of time (months) Objective and subjective data regarding performance of fielded solution 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Report (as appropriate) to user community and oversight bodies Validate business value and user satisfaction Provide input to subsequent releases/ increments

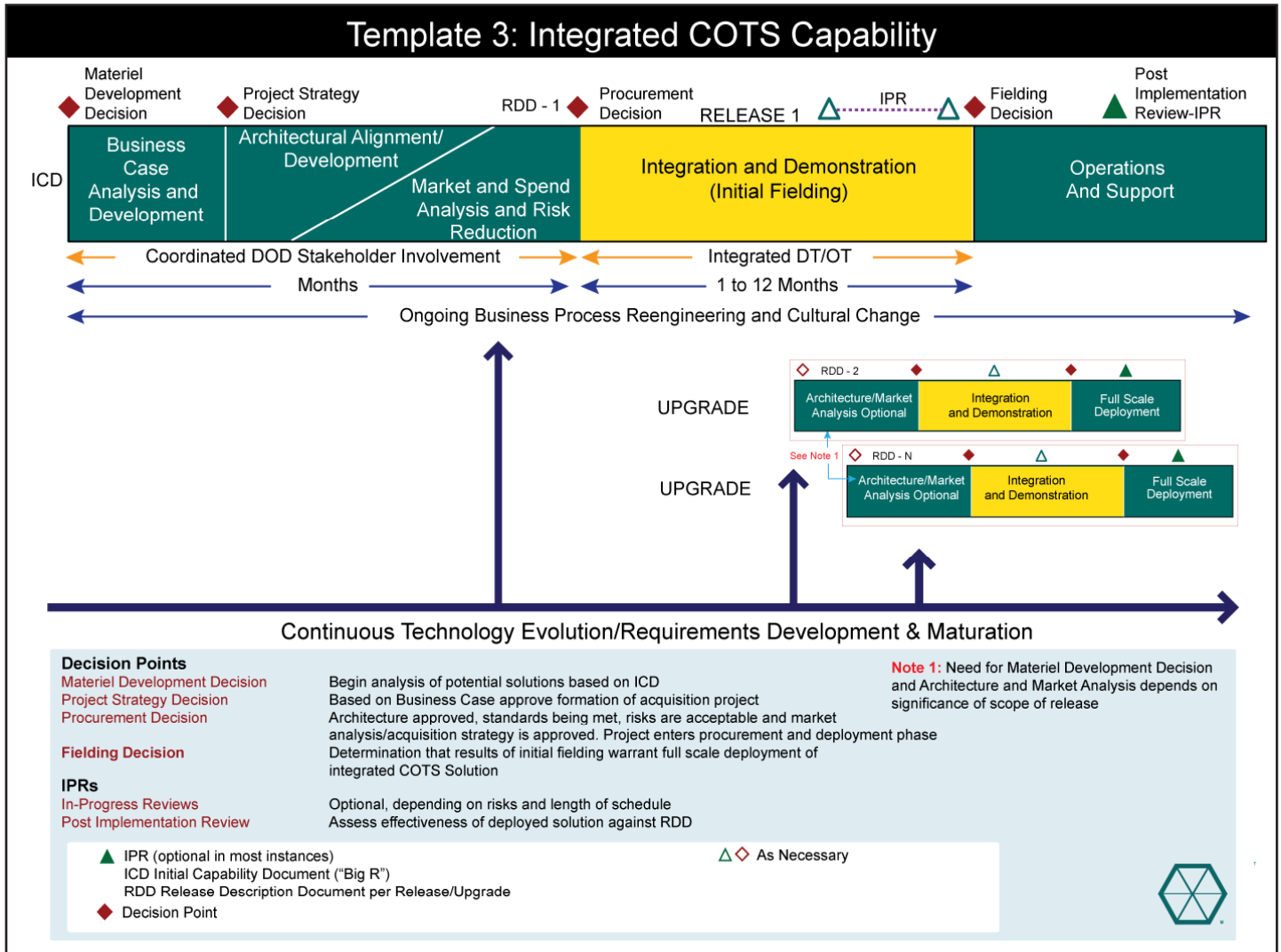
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Procurement Decision	<ul style="list-style-type: none">• Project not making appropriate progress• Issues need resolution	<ul style="list-style-type: none">• Program status (cost, schedule, performance)• User feedback from prototypes, early operational use• Identification of issues (user, acquisition, CIO, contractor)	<ul style="list-style-type: none">• As directed by decision authorities	<ul style="list-style-type: none">• None	<ul style="list-style-type: none">• Expand, change focus, or kill program as appropriate
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Process Template #3: Integrated COTS Capability*

- As appropriate, use similar commercial capabilities as analogous models for DoD performance standards
- Prioritize desired capabilities to permit trade-offs, if necessary
- Acquisition approach
 - Select from the best commercial provider(s)
 - Contract for end capability based on commercial-based performance standards
 - Anticipate technological evolution in acquisition strategy

*Integrated COTS capabilities include DoD teleports, DoD security-enabled wireless networks, or a services oriented architecture infrastructure



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Process Template #3 – Integrated COTS Capability

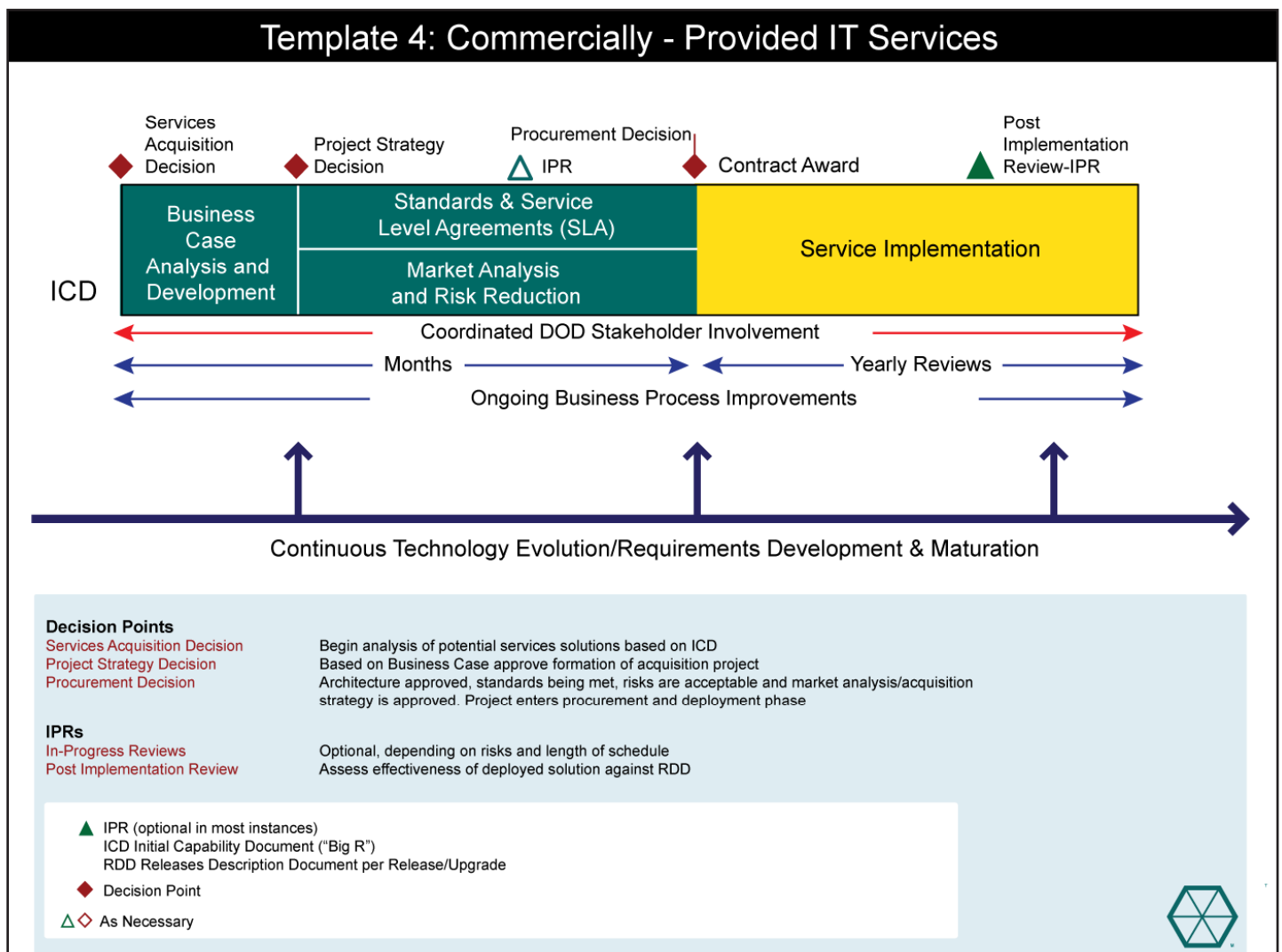
	Key Risks	Information Required	Entry Criteria	Exit Criteria	Decisions
Material Development Decision	<ul style="list-style-type: none"> Requirements not sufficiently defined, not stable, or are overly detailed Ability to meet urgent or critical mission requirement 	<ul style="list-style-type: none"> Prioritized top level requirements approved by user authorities 	<ul style="list-style-type: none"> Approved initial capabilities document 	<ul style="list-style-type: none"> Project organization assigned and funding identified to begin project analysis 	<ul style="list-style-type: none"> Approval to begin business case phase and related analyses of potential solutions Identify time frame for project strategy decision event (time box approach)
Project Strategy Decision	<ul style="list-style-type: none"> No clear strategy to meet user needs Alternatives to meeting user needs not fully evaluated 	<ul style="list-style-type: none"> Top-level strategy for executing project Analysis that supports establishing an acquisition program 	<ul style="list-style-type: none"> Business case Alternatives analysis Market research Cost vs. benefit Project strategy with supporting analysis 	<ul style="list-style-type: none"> Approved top-level project strategy Approved plan for solution definition phase Criteria for procurement decision event 	<ul style="list-style-type: none"> Decision on which acquisition template (1-4) to use Approval to enter solution definition phase Approval to begin architecture and prototype efforts Identify oversight anticipated (e.g., IPRs) as well as timing of IPRs and procurement decision event (time box approach)
Procurement Decision	<ul style="list-style-type: none"> Risks have not been sufficiently explored/reduced Release requirements not scoped or agreed to with users Project planning not sufficient 	<ul style="list-style-type: none"> User approved requirements for Release Acquisition strategy Clinger-Cohen Act compliance 	<ul style="list-style-type: none"> Completed requirements description document Market and spend analysis Results of risk reduction efforts Implementation plan <ul style="list-style-type: none"> Overall plan for all releases Cost, schedule, performance for release 1 Strategy for initial fielding Developmental/operational test plan Contracting and buying strategy 	<ul style="list-style-type: none"> Approved implementation plan for solution procurement phase Approved contracting/buying strategy Approved program baseline: cost, schedule, performance (including time box for initial fielding—expected 1-6 months) 	<ul style="list-style-type: none"> Approval to enter solution procurement phase Baseline approval Clinger-Cohen Act Compliant Limits of authority to field Timing of initial fielding (expected 1- 6 months) Timing/focus of IPRs Contracting/buying strategy approval
Fielding Decision	<ul style="list-style-type: none"> Solution may not be sufficiently mature Deployment strategy is inadequate based on initial fielding User requirements have changed 	<ul style="list-style-type: none"> Test and performance data of initial fielding Deployment strategy 	<ul style="list-style-type: none"> Deployment plan Developmental/operational testing results 	<ul style="list-style-type: none"> Approved deployment plan Postimplementation review timing (time box approach) 	<ul style="list-style-type: none"> Approval to enter full fielding phase Timing of full fielding (time box approach) Timing/focus of IPRs

<p>Postimplementation Review</p>	<ul style="list-style-type: none"> • Solution not meeting user needs in fielded environment • User expectations and business value not met • User requirements have evolved 	<ul style="list-style-type: none"> • Performance data regarding operational use of fielded solution 	<ul style="list-style-type: none"> • Solution has been in use for sufficiently long period of time (2-9 months) • Objective and subjective data regarding performance of fielded solution 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Report (as appropriate) to user community and oversight bodies • Validate business value and user satisfaction • Provide input to subsequent releases/increments
<p>In Progress Reviews (IPRs) (Optional)</p>	<ul style="list-style-type: none"> • Project not making appropriate progress • Issues need resolution 	<ul style="list-style-type: none"> • Program status (cost, schedule, performance) • User feedback from prototypes, early operational use • Identification of Issues (user, acquisition, CIO, contractor) 	<ul style="list-style-type: none"> • As directed by decision authorities 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Expand, change focus, or kill program as appropriate

Process Template #4: Commercially Provided IT Services

- General acquisition principles:
 - ▶ Purchase labor services based on performance levels (rather than technical/task specifications or personnel full-time equivalent levels)
 - ▶ Maintain competitive environment during execution wherever possible (e.g., contract options with ability to quickly switch among providers)
 - ▶ Anticipate technology evolution and changing business environment (and don't try to lock in long-term pricing at contract award)
 - ▶ Adopt commercial performance specifications to the extent possible
 - ▶ Establish rigorous configuration control over systems and software services
 - ▶ Provide substantial incentives for provider to improve performance levels and reduce service cost over time (possible use of share-in-savings concept)
- Develop acquisition strategy based on best practices from IT services contracts, as well as commercial performance specifications and practices
- Use extensive interaction with industry to fine-tune strategy (service bundling, incentives, technology updates, etc.)

Note: There are many variations of IT service contracts, each with different needs and corresponding preferred strategies



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Process Template #4 - Commercially Provided IT Services

	Key Risks	Information Required	Entry Criteria	Exit Criteria	Decisions
Services Acquisition Decision	<ul style="list-style-type: none"> Requirements not sufficiently defined, not clear, or are overly detailed Ability to meet urgent or critical mission requirement 	<ul style="list-style-type: none"> Top level requirements approved by user authorities 	<ul style="list-style-type: none"> Approved initial capabilities document 	<ul style="list-style-type: none"> Project organization assigned and funding identified to begin project analysis 	<ul style="list-style-type: none"> Approval to begin business case phase and related analyses of potential solutions Identify time frame for project strategy decision event (time box approach)
Project Strategy Decision	<ul style="list-style-type: none"> No clear strategy to meet user needs Alternatives to meeting user needs not fully evaluated No strategy to leverage existing COTS, IT platforms, standards, architectures 	<ul style="list-style-type: none"> Top-level strategy for executing project Analysis that supports establishing an acquisition program 	<ul style="list-style-type: none"> Business case Alternatives analysis Market research Project strategy with supporting analysis (optional) initial contracting strategy 	<ul style="list-style-type: none"> Approved initial project strategy Approved plan for services definition phase Criteria and timing for procurement decision event (time box approach) 	<ul style="list-style-type: none"> Decision on which acquisition template (1-4) to use Approval to enter solution definition phase Approval to begin standards, service level agreement, business model development as well as any prototype efforts Identify oversight anticipated (e.g., IPRs) as well as timing of IPRs, initial program metrics, and procurement decision event (time box approach)
Procurement Decision	<ul style="list-style-type: none"> Risks have not been sufficiently explored/reduced Release requirements not scoped or agreed to with users Project planning not sufficient 	<ul style="list-style-type: none"> User approved requirements for services acquisition Acquisition strategy Clinger-Cohen Act compliance 	<ul style="list-style-type: none"> Completed requirements description document Market and spend analysis Implementation plan Cost, schedule, performance Strategy for initial implementation of services Service evaluation plan Contracting strategy 	<ul style="list-style-type: none"> Approved implementation plan for solution procurement phase Approved contracting strategy Program baseline: cost, schedule, performance (including time box parameters as appropriate) 	<ul style="list-style-type: none"> Approval to enter solution procurement phase Baseline approval Clinger-Cohen Act compliant Limits of authority to field Timing/focus of IPRs Contracting strategy approval
Postimplementation Review	<ul style="list-style-type: none"> Services solution not meeting user needs in fielded environment User expectations and business value not met User requirements have evolved 	<ul style="list-style-type: none"> Performance data regarding use of services 	<ul style="list-style-type: none"> Services have been in use for sufficiently long period of time (months) Objective and subjective data regarding performance of services 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Report (as appropriate) to user community and oversight bodies Validate business value and user satisfaction Provide input to subsequent phases of services contract

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In Progress Reviews (IPRs) (Optional)	<ul style="list-style-type: none">• Project not making appropriate progress• Issues need resolution	<ul style="list-style-type: none">• Program status (cost, schedule, performance)• User feedback from early use of services• Identification of issues (user, acquisition, CIO, contractor)	<ul style="list-style-type: none">• As directed by decision authorities	<ul style="list-style-type: none">• None	<ul style="list-style-type: none">• Expand, change focus, or kill services project as appropriate
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