

DoD Information Enterprise Vision

1. DoD Information Enterprise Vision

The DoD CIO is tasked with improving the combat power of the Department—as well as its security and efficiency—by ensuring that the Department treats information as a strategic asset and that innovative information capabilities are available throughout all areas of DoD supporting warfighting, business, and intelligence missions. The DoD CIO Vision and Mission are:

- **Vision** - Deliver agile and secure information capabilities to enhance combat power and decision making.
- **Mission** - Information is one of our Nation's greatest sources of power. Our first and greatest goal is to deliver that power to enable the achievement of mission success in all operations of the Department: warfighting, business, and intelligence.¹

DoD CIO Vision and Mission

Vision - Deliver agile and secure information capabilities to enhance combat power and decision making.

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The DoD Information Enterprise (IE) is the DoD information resources, assets, and processes² required to achieve the vision and perform the mission of the DoD CIO. A robust and seamless IE provides decision makers and action officers with the knowledge they need to make decisions and complete actions. The DoD IE enables net-centric Warfighting, Business, and Intelligence operations as a unified DoD information enterprise. It provides a rich information sharing environment in which data and services are visible, accessible, understandable, and trusted across the enterprise. It also enables an available and protected network infrastructure that enables responsive, information-centric operations, using dynamic and interoperable communications and computing capabilities.

The operational requirements, described in the Operational Context³ section as operational goals and associated outcomes, play an important role in shaping the vision for the IE. The IE must

¹ Department of Defense (DoD) Chief Information Officer (CIO) Campaign Plan, baseline, Version 0, October 5, 2011, Pg. 5.

² DoDD 8000.01, Management of the DoD Information Enterprise, February 10, 2009, Pg. 10.

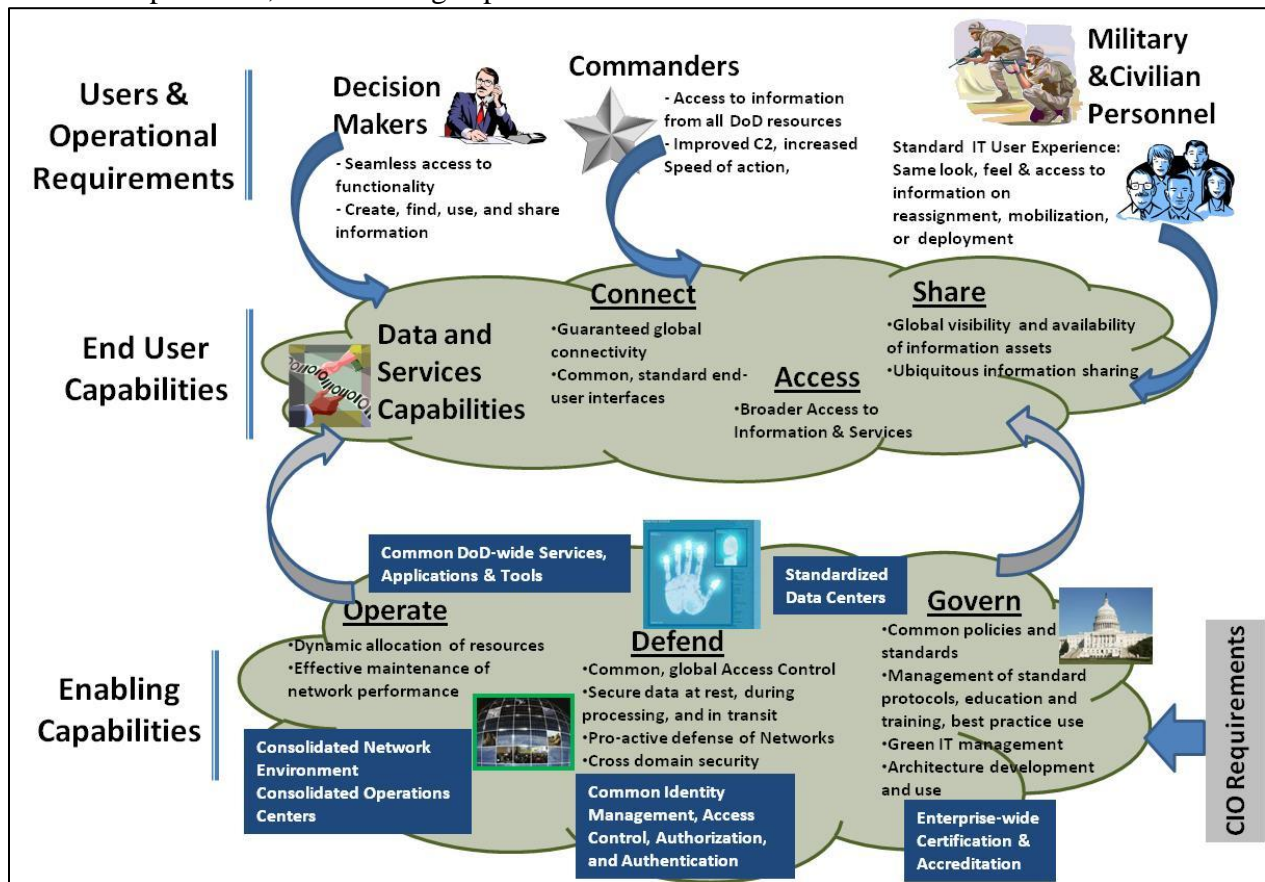
³ The Operational Context is a part of the DoD IEA v2.0 that describes the operational requirements the IE must enable and support. These operational requirements are described as the outcomes and goals that operations must achieve.

Final DoD IEA v2.0: CV-1 Vision

35 enable and support these operational requirements while also meeting DoD CIO management
36 and oversight requirements. The IE will enable, support, and meet these requirements by:

- 37 • Providing end user capabilities to connect to IE networks, access, and share assured
38 information and information assets in support of achieving the operational goals and
39 outcomes described in the Operational Context.
- 40 • Using enabling capabilities within the IE to properly operate, defend, and govern the IE
41 in its provisioning of end user capabilities.

42 Together, the end user capabilities and enabling capabilities comprise the IE capabilities. **Figure**
43 **1, IE Capability Vision**, depicts the vision for the IE with respect to operational requirements,
44 end user capabilities, and enabling capabilities.



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Figure 1 – IE Capability Vision

47 The operational requirements are the basis for determining what end user capabilities the IE must
48 provide. The Operational Context describes these operational requirements in detail and
49 represents them with four goals:

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- 51 • Provide a unified information enterprise optimized for the joint warfighter and supporting
52 business and defense intelligence elements to facilitate force integration;
- 53 • Deliver the information advantage necessary to facilitate freedom of action;

Final DoD IEA v2.0: CV-1 Vision

- 54 • Enable secure access to required information anytime and anywhere, expediting decision
55 cycles; and
- 56 • Ensure agility and versatility of the information enterprise to enable operational reach and
57 synergy of the force.

58

59 Based on these operational requirements, the IE needs to provide a set of capabilities that enable
60 end users to connect to, access, and share information and information assets in performing DoD
61 missions and operations.

62

63 1.1 End User Capabilities

64 End User Capabilities enable users to:

65

- 66 • Connect to the IE network from anywhere, using the various end user devices available to
67 DoD personnel and mission partners.
- 68 • Access information, services, and other information assets when needed, using the various
69 end user devices available to DoD personnel and mission partners.
- 70 • Share information and services throughout the IE and provide global visibility and
71 availability of information, services and other information assets.

72

73 End User Capabilities are provided by an information infrastructure and environment consisting
74 of Enabling Capabilities to operate, defend, and govern the IE.

75 1.2 Enabling Capabilities

76 The intent of End User Capabilities is to optimize visibility, accessibility, trustability, and
77 understandability of information by providing users simple, seamless, intuitive interaction with
78 massive amounts of data through large-scale storage, search, retrieval, fusion and visualization
79 capabilities. To achieve this, common processes and rules for tagging, storing, accessing,
80 integrating, sharing, and visualizing globally distributed, heterogeneous information, data, and
81 explicit knowledge must be established and enforced. It also requires the establishment and
82 enforcement of policies and standards that direct common management processes and maximize
83 information sharing. DoD CIO requirements for developing, operating and managing the IE
84 influence the Enabling Capabilities. Together, these Enabling Capabilities ensure:

85

- 86 • Effective management of network performance and dynamic allocation of enterprise
87 resources
- 88 • Common access control for all users and devices throughout the IE
- 89 • Cross domain security and pro-active defense of networks
- 90 • Data security at all times
- 91 • Common policies, standards, and management processes
- 92 • Effective development and use of architecture

93

94 Enabling Capabilities also promote enterprise-wide, standardized operations and resources. This
95 includes such things as common, enterprise-wide services, applications, and tools; standardized

Final DoD IEA v2.0: CV-1 Vision

96 data centers; consolidated networks and operation centers; common access control; and
97 enterprise-wide certification and accreditation. Delivering the IE Capabilities needed to enable
98 DoD operations requires dynamic, agile, and responsive infrastructure components.

99 **2. Vision for Delivering IE Capabilities**

100 To deliver required IE Capabilities, infrastructure components, such as computing,
101 communications, and enterprise services resources require characteristics and attributes that
102 enable dynamic, agile, and responsive operations. Mission Assurance, consisting of NetOps and
103 Information Assurance, play a key role in securing and protecting the IE. Together, these
104 infrastructure components deliver the capabilities provided by the IE.

105 **2.1 Computing Resources**

106 The vision for computing resources is a set of consolidated and logically interconnected Core,
107 Regional, Local and Mobile/Tactical computing centers that deliver cloud-based, on demand
108 services to all DoD users and devices. Each computing center instantiation is operated according
109 to a set computing center attributes and standards for the following: dynamic allocation of
110 resources, multi-tenant applications (server virtualization), Green IT, and the enablement of data
111 visibility, accessibility and understandability. Computing resources of the future will:

- 112 • Enable on-demand, distributed, dynamic, and high performance computing.
- 113 • Provide the ability to process data and to enable physical and virtual access to hosted
114 information and data centers across the enterprise.
- 115 • Maximize computing capacity, provide standard and well defined services optimizing
116 assets and resources, and minimize cost in support of cross-organizational,
117 geographically dispersed users.
- 118 • Enable a service-centric IE and support new service-oriented approaches, such as cloud
119 computing and virtualization (including IaaS, PaaS, & SaaS), for sharing, storing,
120 processing, and transporting information.
- 121 • Provide rapid and ubiquitous access to data and information anywhere on the network to
122 authorized users (personnel or machines).
- 123 • Support dynamic, responsive Enterprise Management, Network Assurance, Content
124 Management, and Information Assurance functions.
- 125 • Be evolved such that improved processing and storage capabilities are deployed close to
126 the “tactical edge”
- 127 • Provide a common set of foundational capabilities and services that simplify
128 development or implementation.
- 129 • Facilitate the capability to make data assets visible, accessible, and understandable.
- 130 • Provide “shared” space for data and application services.
- 131 • Provide on-demand capacity and self-provisioned services that can elastically scale, as
132 required.

Final DoD IEA v2.0: CV-1 Vision

- 133 • Design web-based applications and services to run in consolidated and virtualized
134 enterprise data centers as well as being “mobile device ready” from the start.

135 **2.2 Communications Resources**

136 The vision for communication resources is a robust and dynamic physical and logical
137 communications infrastructure that will accommodate ubiquitous transport of all required
138 information and services to all authorized users. The Communications infrastructure will
139 provide secure, agile, seamless, and survivable end-to-end connectivity (from core⁴ to tactical
140 edge) and on-demand bandwidth that is dynamically allocated, based on operational priority and
141 precedence among the millions of space, air, sea, and terrestrial-based fixed, mobile, and
142 moving users. The communications resources of the future will:

- 143 • Contain an agile mesh of diverse landline, satellite, and wireless capabilities providing
144 net enabled applications and data from the National Command Authority (NCA) down to
145 the tactical edge.
- 146 • Increase transport capability across the IE to accommodate emerging, net-enabled
147 capabilities offered as services that remain readily available, secure, on-demand, 24/7.
- 148 • Enable Unified Capabilities (converging IP based networked integrated applications for
149 voice, video, and data delivered ubiquitously and over high-speed optical infrastructure)
150 based on a unified customer interface standardized on Ethernet and IPv6 technologies.
- 151 • Enable robust and extensible cross domain capabilities (capability to securely move
152 information among multiple security enclaves) to support a secure and integrated
153 information enterprise.
- 154 • Support dynamic, responsive Enterprise Management, Network Assurance, Content
155 Management, and Information Assurance functions.
- 156 • Reduce the communications hardware footprint in the tactical environment by moving
157 toward a single, common set of radio network components.
- 158 • Be designed to allow transparency through increasingly resilient networks and flexible
159 provisioning of net-centric infrastructure systems that are secure and highly available.
- 160 • Support mobile users and mobile devices in all environments including disconnected
161 operation, intermittent connectivity, and limited bandwidth (DIL).
- 162 • Enable virtualized and federated networks characterized by virtualized Defense
163 Enterprise Security Architecture (DESA) Stacks which provide perimeter protection for
164 designated regions.
- 165 • Consist of a much smaller number of discreet networks than exists today achieved
166 through consolidation and modernization initiatives now being pursued by the MilDeps
167 and other Components.

⁴ Core refers to the Global Fixed Assets or Fixed but Mobile-in-Theater Assets.

Final DoD IEA v2.0: CV-1 Vision

168 **2.3 Enterprise Services Resources**

169 The vision for enterprise services is an agile, distributed, single service-oriented enterprise for
170 development, management, and use of “Applications, Services, and Information” throughout the
171 DoD Enterprise. This service-oriented enterprise is more user-centric and focused on the tactical
172 edge (end-user in garrison or deployed) by embracing simplicity, leveraging and directing
173 current information technology investments, and aggressively seeking innovative new ways to
174 solve the command and control issues of the Department. This vision embraces the coexistence
175 of Enterprise and Mission specific services that will separately, or in combination, allow access
176 by users to the full spectrum of services available across the DOD Enterprise. Enterprise services
177 resources of the future will:

- 178 • Provide for rapid development and use of services in the IE.
- 179 • Provide development environments where new services can be developed and
180 modified/tailored for mission specific uses in the field, almost on the fly.
- 181 • Produce information that is easily discoverable, accessible, understandable and useful
182 to consumers.
- 183 • Support dynamic, responsive Enterprise Management, Network Assurance, Content
184 Management, and Information Assurance functions.
- 185 • Include a common adaption layer for application services to transparently interface with
186 enterprise infrastructure services
- 187 • Extend existing strategic applications and services to the tactical edge environment.
- 188 • Provide repeatable tactical edge service implementations as well as consistent
189 implementation results and service performance.
- 190 • Improve service interoperability, reuse, and plug-n-play for new service creation.
- 191 • Make services, information and capabilities seamlessly available to users in
192 environments characterized by disconnected, operation, intermittent connectivity and
193 limited bandwidth (DIL).
- 194 • Deliver common, ubiquitous, shared services and applications as Enterprise Services
195 freeing Components to focus on the delivery of Component-unique services.

196 **3. Summary of IE Vision**

197 The DoD IE is essential to achieving the vision and performing the mission of the DoD CIO. The
198 DoD IE, as a unified DoD information enterprise, creates an information advantage for our
199 people and mission partners. It provides a rich information sharing environment in which data
200 and services are visible, accessible, understandable, and trusted across the enterprise. It features
201 an available and protected network infrastructure that enables responsive, information-centric
202 operations, using dynamic and interoperable communications and computing capabilities. The
203 DoD IE, driven by the operational requirements it must support and enable, provides a set of IE
204 Capabilities. These capabilities consist of End User Capabilities and Enabling Capabilities. End

Final
DoD IEA v2.0: CV-1 Vision

205 User Capabilities enable users to connect to, access, and share information and information
206 assets in performing DoD missions and operations. Enabling Capabilities provide the ability to
207 operate, defend, and govern the IE and comprise the information infrastructure and environment
208 that provide End User Capabilities. DoD CIO requirements for developing, operating and
209 managing the IE influence and guide the Enabling Capabilities. The IE Capabilities are delivered
210 using computing, communications, and enterprise services resources. IE Capabilities support and
211 enable warfighting, business, and intelligence operations.