Document Revision History for: ____

Version	Date	Author	Change Description

SECTION 12

MARAD HARDWARE AND SOFTWARE REPLENISHMENT CYCLE

12.1 Introduction

The hardware and software that make up the Maritime Administration (MARAD) IT infrastructure including desktop computers, notebooks, printers, peripherals, network resources and software are used to ensure that MARAD is capable of meeting its mission goals and programs objectives. This infrastructure establishes a critical link between MARAD and other government agencies, stakeholders, business partners, industry and the general public. To ensure the continued availability of this critical infrastructure, a structured hardware and software replenishment cycle is essential.

12.2 Business Case

To ensure continued and effective communication between MARAD and its stakeholders, it is critical that our hardware and software keep pace with ever-changing mission objectives and program requirements, as well as technology. A hardware and software replenishment cycle policy and schedule will ensure our continued ability to deliver integrated, reliable critical infrastructure services. Implementing a hardware and software replenishment cycle will deliver the following results:

12.2.1 Enhanced Security

Today, corporate data and trade secrets are at risk because of security vulnerabilities at the client level. Aging business computers with older operating systems are beginning to develop permanent security holes as Microsoft phases out support for Windows* 95, Windows 98 SE, Windows ME and Windows NT 4.0. Even if we are conscientious about patching these operating systems when flaws are identified, eventually Microsoft will cease providing new patches. Therefore we should take measures to protect our infrastructure — chief among those measures is replacing aging hardware and software that supports our business systems. MARAD experienced 11,155 virus attacks in 2003. The downtime was minimal or nonexistent due to the aggressive virus protection measures the Office of Chief Information Officer had implemented (up-to-date virus scan software on both file servers and desktop PCs, daily virus scan on all desktop PCs and file servers).

Cost of lost productivity in a virus attack

Impact on Employee Productivity						
	2 Hours	4 Hours	1 Day	2 Days	3 Days	1 Week
20%	$5,184	$10,368	$20,736	$41,472	$82,944	$165,888
30%	$7,788	$15,576	$31,152	$63,304	$124,608	$249,216
40%	$10,368	$20,736	$41,472	$82,944	$165,888	$331,776
50%	$12,960	$25,990	$51,840	$103,680	$207,360	$414,720
60%	$15,552	$31,104	$62,208	$124,416	$248,832	$497,664
70%	$18,144	$36,288	$72,576	$145,152	$290,304	$580,608
80%	$20,736	$41,472	$82,944	$165,888	$331,776	$663,552

You can expect an average virus attack to impact you from 4 hours to 3 days and cost from $480 to $4,320 in direct labor productivity loss.**

**Assuming an average hourly cost of $54/hr ($108k/yr) for 240 employees

Weaknesses in legacy operating systems represent an important reason for upgrading to computers running the latest operating systems, including Windows XP Professional. Newer computers have the power required to implement current security features and they can be updated for years to come.

So why not just upgrade existing systems to Windows XP without refreshing the computers? Because it is cost-prohibitive, and even if the operating systems were upgraded, new computers will still be needed down the road. Research firm Gartner Inc. estimates the cost of an operating system upgrade at $230 to $500 per system. Those costs, combined with others like hardware upgrades, technician expenses, and more, make a complete computer refresh and operating system upgrade a wiser, and more long-term, solution.

12.2.2 Increase Productivity

Another reason that MARAD must consider upgrading its computers is the boost in productivity that new desktop and notebook systems can yield. In fact, a Pentium IV Processor 3 GHz-based computer demonstrated more than a six fold performance boost on the SYSmark benchmark over an Intel Pentium III processor-based computer. In addition, new processor technologies allow users to finish more jobs in less time than mere speed alone can accomplish. Finally, upgraded computers enable new usage models that increase productivity. For instance, e-learning, which allows workers to receive training at their desks and saves companies the cost of classroom training, requires substantial processor power, as do online collaboration and XML processing — both of which are proven technologies for boosting productivity. According to Gartner, Inc., employees with notebooks see up to three hours of increased productivity per week over their desktop-based counterparts or $162 in savings (based on an average rate of $54/hour).

Total Annual Cost of a New PC vs an Old PC				
	Productivity Cost	**Support Cost**	**Maintenance**	**Total Cost**
New PC	($58,320)	$80	0	($58,240)
Old PC	$58,320	$500	$400	$59,220
Note: Based on a $54/hr rate of 240 employees				

12.2.3 Reduced Costs

Aging computers running older operating systems and applications often cost more to own and manage than newer systems. Migrating to new client computers and operating systems produces measurable cost savings, reduces environmental complexity, and helps avoid future large-scale upgrades. In addition to cost savings, a regular computer refresh cycle reduces the number of configurations across the environment, and a stable platform means fewer re-configurations.

12.2.4 DOT IT Consolidation

MARAD must adhere to the standards set by the DOT IT consolidation team to ensure a smooth transition to the new environment and the relocation to the new building. Significant productivity loss will occur if the transition is not transparent to our users. They will experience unnecessary downtime of their computers and possible loss of access to their data. Additionally MARAD may experience additional and high costs to migrate data and applications to the new DOT IT standards. The older our computer systems and software are, the more expensive and time consuming the transition will become. The measure of frustration this will cause to users is immeasurable.

12.3 Policy - Requirements

12.3.1 This policy applies to computers attached to the MARAD network and computers needing to fully participate in the information technology enterprise.

12.3.2 Every computer, including notebooks, will be replaced with a new computer a minimum of once every four years. At the time of purchase, the new computer must meet the minimum level of technology set by the Office of Chief Information Officer (OCIO) for new computer purchases. The minimum level of technology for new personal computer purchases will be based on MARAD and DOT Enterprise Architecture requirements as well as input from the Information Technology Investment Review Board (IT IRB). The current minimum level will be reviewed at least once a year and will be current on the OCIO web site.

12.3.3 The OCIO support is structured around the four year replacement cycle. The highest level of support is provided for software and hardware less than four years old.

12.3.4 The OCIO has adopted the following industry standards for hardware and software replacement cycle:

Item Description	Replacement Cycle
File Servers	4 to 5 Years
Desktop Computers	3 to 4 Years
Notebook Computers	3 Years
Software and Operating Systems	4 to 5 Years
Peripherals	4 to 6 Years

12.3.5 The following baseline standards were developed as part of the MARAD and DOT Enterprise Architecture. These baseline standards will enable a smooth transition to the DOT IT standards and will ensure continuity of service for MARAD and its users with minimal interruptions. These industry-based standards should be followed when purchasing new desktops or notebook computers.

Note: These are minimum standards. The MARAD and DOT Enterprise Architecture encourage procuring high-end desktop and notebooks (i.e., Pentium IV, etc.) and using the chart below as the minimum requirements.

Desktop System	**Specifications**
Manufacturer	Dell
Processor	Pentium IV 3 Ghz
Memory	256 MB
Hard disk	40 GB
Monitor	17" SVGA, 75Mhz refresh rate, .28 dpi Note: If space is an issue, a 15" flat-panel can be used.
Network Interface Card (NIC)	OCIO recommended (3com) Ethernet NIC, integrated NIC
CD-ROM / DVD / CDR	10-24X minimum speed
Operating System	Windows 2000 for file servers and Win XP for desktops and notebooks *Note: Windows 2000 upgrades from Win95/98 will not be done by OCIO*
Network Operating System	Microsoft Networking (NT)
Notebook System	**Specifications**
Manufacturer	Dell
Processor	Pentium IV 1.2 Ghz
Memory	256 MB
Hard Drive	30 GB
Network Interface Card (NIC)	PCMCIA Ethernet or built in
CD-ROM / DVD / CDR	User preference
Modem	PCMCIA 56K
Operating System	Windows 2000 / Win XP

Hardware and Software Replenishment Schedule

MARAD has approximately 1,100 desktop computers in use, 130 printers, 40 file servers and 60 notebooks. Below is the replacement schedule for existing equipment as of February 2004.

Item Type	Description	Total Inventory	Replacement Schedule	Replacement Quantity	Estimated Cost
File Server	Pentium II and lower		FY 2004		
	Pentium III		FY 2004-2005	40	
	Pentium IV		FY 2005-2006		
Desktop	Pentium II & lower		FY 2004	410	
	Pentium III (Dell GX100s and some GX200s)		FY 2004-2005	690	
	Pentium IV (Dell GX200s and some GX400s)		FY 2005-2006	xxxx	
Notebooks	Pentium II & lower		FY 2004	30	
	Pentium III		FY 2004-2005	30	
Peripherals	Laser Printers (replaced as needed)		FY 2004-2006	100	
	Color Printers (replaced as needed)		FY 2004-2006	30	
	Scanners (replaced as needed)		FY 2004-2006	40	
	Others hardware & software (replaced as needed)		FY 2004-2006		
Software	MS Windows NT & lower		FY 2004-2005	1100	
	MS Office 97		FY 2004-2005	1100	

Note: All new hardware will be labeled with replacement cycle and warranty information. (See Appendix 12-1 for detailed schedule.) If replenishment cycle is not achieved in any year, the replacement quantities must be carried into the following year.

Appendix 12-1
Replenishment Schedule

FY 2004																		
MAR-CODE		**100**	**220**	**240**	**300**	**310**	**320**	**330**	**340**	**360**	**380**	**400**	**410**	**420**	**450**	**500**	**560**	**590**
Total by MAR-CODE		6	22	1	2	3	1	16	6	7	15	2	2	0	8	6	7	
MAR-CODE		**600**	**610**	**620**	**630**	**700**	**760**	**770**	**780**	**800**	**810**	**820**	**830**	**2100**	**3100**	**4100**	**6100**	**7100**
Total by MAR-CODE		1	21	2	7	0	14		2	1	2	3	13	2	10	8	0	10
Total Headquarters	**170**																	
Total Regions	**30**																	
Total MARAD	**200**																	

Appendix 12-2
Installation Schedule

Detailed installation schedule will be provided to affected users based on the format below:

Hardware and Software Installation Schedule									
		Room	Description of Item	Installation	Alternative		User needs	Training	Date Installation
MarCode	User Name	Number	To be Installed	Date	Date	Duration	Training	Date	Completed
340	Smith, John	7317	Dell GX400 w/ Office 2003	6/30/2004	7/10/2004	2 hours	Yes	7/9/2004	7/10/2004

Note: Successful installation completion is based on the timely purchase and receipt of equipment and labor availability to install that equipment. Installation dates will be coordinated directly with affected offices and users.

Appendix 12-3

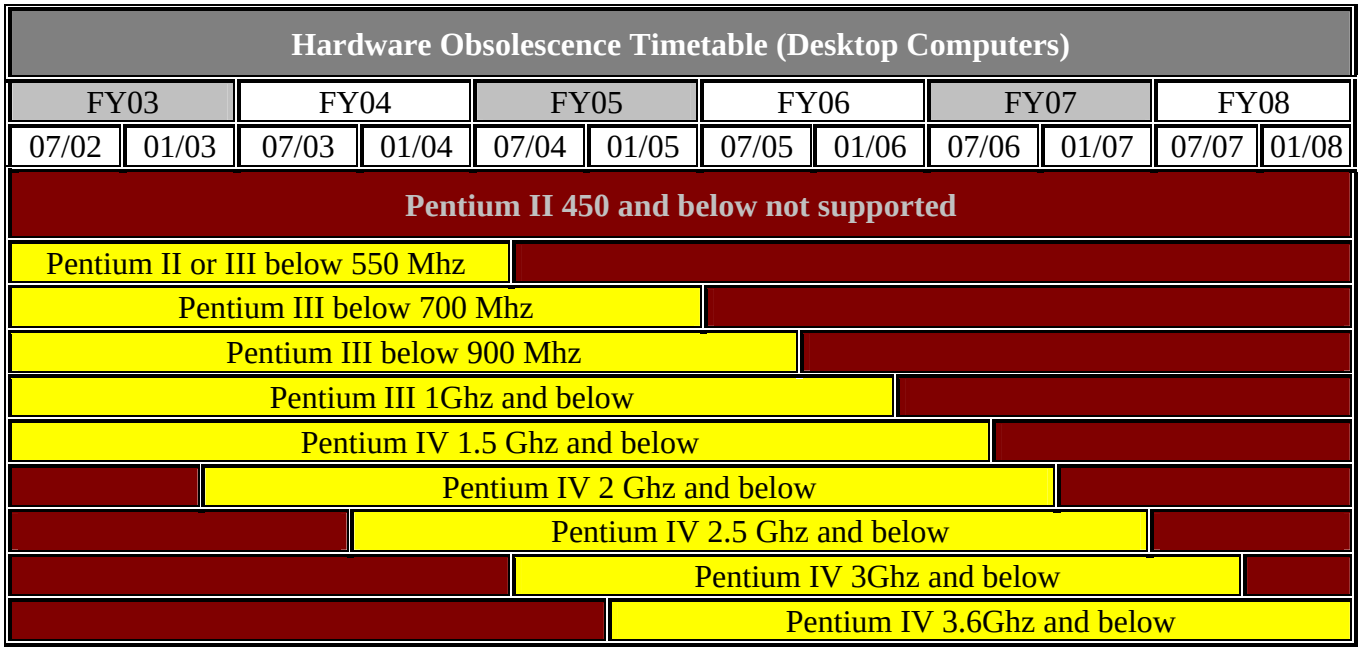
MARAD Current Desktop Computer Configuration

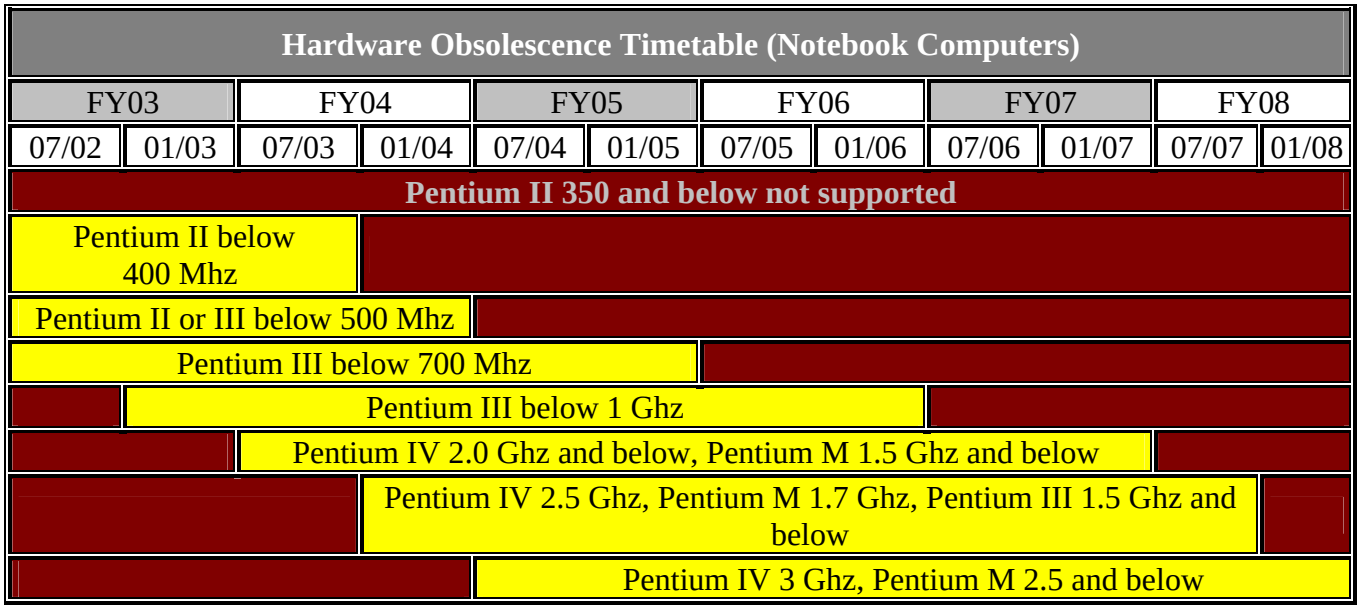
Computers provided by the Office of the Chief Information Officer have the following standard software, services and features:

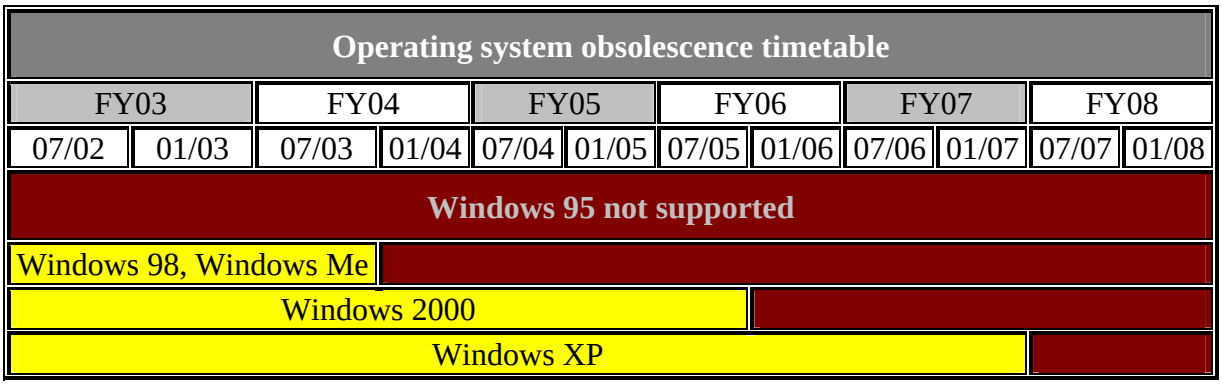
Software		
	Microsoft Office Suite	Microsoft Word Microsoft Excel Microsoft PowerPoint Microsoft Access Microsoft Outlook
	Adobe Acrobat Reader	
	McAfee Virus Scan Software	
	WinZip	
	Surfer (DOT Forms)	
	FormFlow	
Hardware		
	Dell Computer brand	Personal Computers Pentium III 800 Mhz; 128MB RAM; 10GB Hard Disk; 17" Monitor; CD-Rom. Notebooks / Laptops
	Printers	Hewlett Packard Printers - black & white / color Tektronix / Xerox - Color
Network Drives Mapping		
	F: (users\username)	Users private network folder
	G: (exchange)	Organization / community shared folder

Appendix 12-4

Hardware & Operating Systems Obsolescence Timetable






Operating system obsolescence timetable
FY03
FY04
FY05
FY06
FY07
FY08
07/02
01/03
07/03
01/04
07/04
01/05
07/05
01/06
07/06
01/07
07/07
01/08
Windows 95 not supported
Windows 98, Windows Me
Windows 2000
Windows XP