# Appendix F: Configuration Management for Infrastructure and COTS

The implementation of COTS in an IT environment requires a project lifecycle similar to that of developed software or hardware. However, because the products being implemented are assumed to be baselined upon arrival, the development lifecycle and accompanying CM activities are tailored to reflect this. The basic CM functions of configuration identification, change control, configuration status accounting, and configuration audits are all still required, but they are implemented in a different way.

Please note that this appendix includes a tailored version of the software development lifecycle discussed in Section 3, and only elaborates on CM activities that differ from or are performed in addition to those in software development. CM activities not specifically discussed in this appendix should be assumed to require no tailoring.

Tailoring the Lifecycle
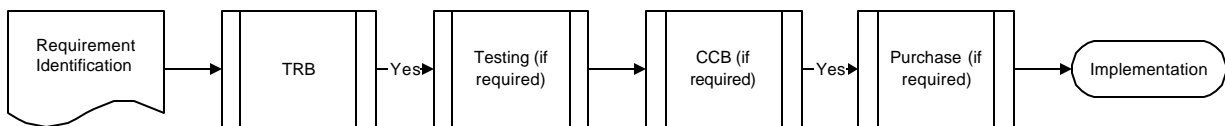
Figure F-1, Infrastructure/COTS Lifecycle

Figure F-1 shows a sample lifecycle flow tailored to infrastructure COTS implementation. It includes steps and processes for (processes are noted in italics):

1. *Requirement Identification*
2. *Technical Review Board review*
3. *Testing in the LAN/WAN environment (if required)*
4. *Configuration Control Board review (if required)*
5. *COTS purchase (if required)*
6. *Implementation*

In this lifecycle, a user identifies a requirement for a piece of software or hardware, and submits that requirement to the organization which controls the infrastructure via a change request. A technical review board reviews the proposed change and may develop a test or implementation plan, if required. Testing is performed if required; it is possible that some changes will not require testing. Then the proposed change may be reviewed by a configuration control board, and, if approved, purchased and implemented. As in Figure 3-1, the change request process spans the entire lifecycle.

This lifecycle process differs from that in Figure 3-1 in that there is no requirements finalization, development, functional and IA acceptance, CM acceptance, product

release, or documentation center functions. These are all items required to ensure a repeatable, high-quality software product is released. When implementing COTS products, however, these steps have already been performed by the vendor and are not required to implement the product in a LAN/WAN environment.

Configuration Identification
Configuration identification is discussed in section 2.4.1.

Project Baselines
Baselines provide an official standard on which subsequent work is based, and to which only authorized changes are made. The different types of baselines are described in section 2.4.1.1, and include functional, allocated, development, and production. Some organizations also identify test baselines during their lifecycle process.

Many LANs or WANs have one environment (or baseline) – the production environment (baseline) – consisting of server room equipment, communications wiring and equipment (hubs, switches, routers, etc…), network printers, and desktops and peripherals. Many organizations maintain a separate test lab which includes the elements specific to their LAN: equivalent servers, communications equipment, printers and workstations. This lab is used to test the ability and interoperability of new software and upgrades to existing software, as well as different implementation methods. Organizations that are not able to maintain a separate environment for development and/or testing should develop test procedures that include measures to prevent disruption of the production environment.

Because of the limited use of different environments (and baselines), changes are of a necessity processed and implemented in a different way. The change request process is tailored to reflect only those environments that exist – for example, a change management process may include statuses for submitted, reviewed, approved (disapproved), tested, and implemented.

Configuration and Change Control
Configuration control is the process of evaluating, approving, and monitoring the implementation of changes to baselines during development, operation, and maintenance. Configuration control is discussed in section 2.4.2.

Configuration Status Accounting
Configuration Status Accounting (CSA) is the recording, monitoring, and reporting of all changes to established baselines for each CI. Change status is maintained for all managed or controlled CIs, including documentation, software (COTS and developed/maintained), and hardware. CSA is discussed in section 2.4.3.

Configuration Audits
Configuration audits assure DLA management that products purchased, upgraded, developed, maintained, or installed conform to baseline specifications and other applicable DOD and DLA requirements. These audits, which are supported by the CM

team, are also used to evaluate the effectiveness of the organization's CM procedures, and, as necessary, as a basis for providing recommendations for CM process improvements. The results obtained from audits are used to assess the CM program and to ensure that it reflects adjustments necessary to provide effective CM support.

COTS hardware and software are considered baselined as received, and FCAs/PCAs (see Sec. 2.4.4) may not be necessary. Configuration audits should be performed periodically to ensure the integrity of documented CIs.

Configuration Audits/Authentication
Configuration authentication involves inspections, tests, reviews, and audits to ensure that the CIs and associated documentation accurately represent the approved configuration baselines. Release management, testing, and quality assurance (for test validation) may be performed as part of the configuration authentication process.