3.4.1 Domain Management

The domain management model specifies the direction, organizing, resourcing, planning, and coordination of a domain engineering project targeting a specified coherent market. Program management establishes a domain as its technical agent and pursues continuous improvement in the quality of its work. A domain is focused on providing associated manufacturing projects with the capabilities and materials needed to build products that meet the needs of customers in the targeted market. This model has three elements: domain direction, domain planning, and increment performance.

Domain management is a variant of singular-product project management (as described in section 2.2), differing in three aspects: (1) its "customer" is a set of projects that build customized products for customers in the targeted coherent market, (2) its "product" is a domain (i.e., a product family and associated means for deriving products), and (3) the product family encompasses complete software-based products as appropriate (i.e., based on competence to perform all aspects of integrated systems, software, and hardware engineering and manufacture).

Domain Direction

Domain direction specifies the relationship of the domain to the program and related domains (if any). A domain is initiated by a program to create and coordinate technical capabilities that enables projects to build similar customized products for their customers. Domain direction collaborates with program management to develop a domain strategy consistent with program objectives, designated market, and allocated resources.

Based on the domain strategy, domain direction coordinates domain engineering technical efforts with projects and reports on progress to program management. Domain objectives focus on the current and future needs of the targeted coherent market as a whole. Program management provides direction on conformance to enterprise- and program-level policies and procedures and use of associated services, including marketing, financial, facilities, personnel, and technology capabilities that support domain efforts.

The domain strategy includes definition of the process for performance of domain engineering (e.g., as described in section 3.0). Domain engineering process quality is an elaboration of the four categories of developmental quality as defined for software engineering (in section 2.2): feasibility, sustainability, conformability, and verifiability. Domain ("product") quality is evaluated in terms of the developmental and product behavioral quality that can be achieved by projects in building products.

Domain Planning

Domain planning specifies a domain plan having two aspects: the nature of the relationship between the domain and dependent projects and a master plan for realizing the domain over its expected useful life.

Domain planning operates to effect the relationship of domain engineering to manufacturing projects as specified in the program performance element of project management: as a shared technical resource, as a collaborative collective within which projects operate, or as the technical authority over projects.

The domain master plan specifies building the capabilities of the envisioned domain over a series of increments. These capabilities evolve over time as resources and technology are available to make improvements and as market and project needs change. With appropriate coordination of scope and resources, increments may be scheduled to overlap or include tasking that continues over multiple increments.

Increment Performance

Increment performance specifies a plan for the performance, in accordance with the domain engineering process, of a domain increment as specified in the domain master plan. Domain increments are typically limited to a maximum of three months to enable responsiveness to progress against plan and changes in market and project circumstances.

Increment performance entails elaborating, resourcing, and directing iterative performance of the increment plan to produce a domain realization that satisfies the quality criteria specified in the domain direction element. Ongoing reviews include

monitoring of product manufacturing project experiences to identify needed improvements in current domain capabilities or potential changes in customer and market needs that could motivate changes in the domain increment or master plan.