

**ENGINEERING**

The engineering functional category includes the effort and costs expended in the scientific exploration, study, analysis, design, development, evaluation, and redesign of a specific task or work breakdown structure element. Engineering also includes preparation of specifications, drawings, parts, lists, and wiring diagrams; technical coordination between engineering and manufacturing coordination of suppliers; planning for and scheduling of tests; analysis of test results, reduction of data; and preparation of reports. It also includes the determination and specification of requirements for reliability, maintainability, and quality control. Engineering is generally considered to be a basic functional cost category.

Engineering costs may also be subdivided into recurring and non-recurring components. Nonrecurring engineering costs usually include the costs of all design and development activities through first release of drawings and data. Recurring engineering costs are generally related to sustaining engineering that involves the maintenance and updating of drawings and data and all continuous support of the fabrication, assembly, test, and delivery of contract end items.

**TOOLING**

The tooling functional category includes equipment and manufacturing aids a contractor acquires, manufacturers, or replaces in the performance of a contract. Examples include jigs, dies, fixtures, molds, patterns, and special gauges. These tools, sometimes called

special tools, are of such a specialized nature that their use is limited to the production of supplies or parts or the performance of services particular to the needs of the customer. In military business, the “title” for tooling resides with the customer; in commercial practice, the “title” resides with the contractor.

Tooling costs may also be subdivided into recurring and nonrecurring components. Nonrecurring tooling costs consist of all design and development costs through initial release of basic tooling. Recurring tooling costs are generally related to sustaining tooling that involves the maintenance, repair, modification, and replacement of basic tooling following initial release.

## **QUALITY CONTROL**

The quality control functional category includes activities involving checking, physically inspecting, measuring, and testing the product. Quality control efforts typically focus on manufacturing, shops, receiving and shipping, and records necessary to ensure that hardware, end items, parts, components, processes, and tests are being fabricated, assembled, and tested in accordance with engineering drawings and specifications.

## **MANUFACTURING**

The manufacturing functional category includes the effort and costs expended in the fabrication, assembly, and functional testing of a product or end item. It involves all the processes necessary to convert a raw material into finished items.

### **Materials and Purchased Parts (Manufacturing)**

Materials and purchased parts within the manufacturing functional category include the costs of raw and semifabricated material plus purchased parts used in the manufacture of the specified reporting element. The purchased parts are essentially off-the-shelf items widely used in industry and supplied by a specialized manufacturer who has the proprietary right to the product. The following are examples of materials and purchased parts:

- Raw materials in typically purchased forms and shapes (sheets, bars, rods, etc.).
- Semifabricated materials in typically purchased forms and shapes (wires, cables, fabrics, conduits, tubing, sealing strips, fiberglass, windshield glass, etc.).
- Raw castings and forgings.
- Manufactured proprietary clips, fasteners, hose clamps and assemblies, and seat belts.
- Standard and proprietary valves, cocks, and hydraulic and plumbing fittings and fixtures.
- Standard electrical fittings (conforming to underwriters and other standard specifications).

Purchased parts are distinguished from purchased equipment by cost and complexity.

### **OVERHEAD**

Overhead represents all indirect costs, except G&A expenses, that are properly chargeable for the specified reporting element.

### **G&A**

G&A consists of indirect expenses related to the overall management and administration of the contractor's business unit, including a company's general and executive offices, the cost of such staff services as legal, accounting, public relations, financial and similar expenses, and other general expenses. G&A is also considered a generic term to describe expenses whose beneficial or causal relationship to cost objectives cannot be more accurately assigned to overhead areas for engineering, manufacturing, material, and so on.