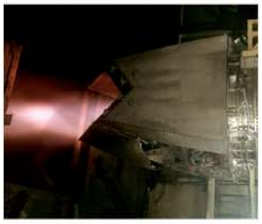
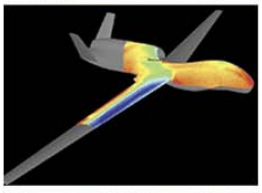
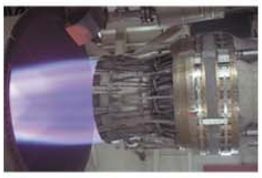






2001

Arnold Engineering Development Center

Strategic Plan

Revision 1
December 2001

An Air Force Materiel Command Test Center

CONTENTS

Figures

Tables

Tables Cont'd

Appendix

COMMANDER'S STATEMENT

This strategic plan will make Team AEDC more customer focused and thus more responsive to their needs. We succeed when they succeed. For those center leaders who must plan and execute yearly performance plans, this plan will help you prioritize your activities. For those of you who are concerned with our measures of performance or metrics, this plan will help you streamline your efforts and understand how the data will be used. For our customers and stakeholders, this plan illustrates our strategic intent. This plan will help members of Team AEDC improve their work performance. We must intently focus on providing valuable and affordable customer service. By focusing on our Strategic Thrusts and Critical Success Factors, we will help ensure a brighter future for AEDC and continued aerospace superiority for our nation.

DAVID J. EICHHORN, Colonel, USAF
Commander, Arnold Engineering Development Center

OVERVIEW

Arnold Engineering Development Center (AEDC) is the host unit of Arnold Air Force Base, the only active-duty Air Force base in Tennessee. AEDC is a part of the Department of Defense's Major Range and Test Facility Base (MRTFB) and is an Air Force Materiel Command (AFMC) test and evaluation center.

The center's joint staff of approximately 300 Air Force, Navy, and Army officers and enlisted personnel, and federal government employees is responsible for management direction, resource allocation, and contract administration for approximately 2,300 contractor employees. AEDC has had a contractor work force since its dedication on 25 June 1951 and is recognized as a model of outsourcing.

MISSION

AEDC is a national aerospace ground test facility that conducts tests, engineering analyses, and technical evaluations for research, system development, and operational programs of the Air Force and Department of Defense, other government agencies, and industry. Using ground test facilities, AEDC supports propulsion, aerodynamic, reentry, transatmospheric, and space-flight systems testing. Testing is performed in an environment that simulates operational conditions. AEDC performs research to develop new technology for advanced test facilities, test techniques, and measurement methodologies associated with ground testing.

GOALS

- Satisfy our customers' needs – in war and peace
- Enable our people to excel
- Sustain technological superiority
- Enhance the excellence of our business practices
- Operate quality installations

PRODUCTS AND SERVICES

AEDC provides test and evaluation for aerospace ground testing of jet engines, air vehicles, store separation, rockets and launch vehicles, spacecraft, ballistic missile defense systems, and nuclear weapons effects. AEDC performs aerospace tests, engineering analyses, and technical evaluations for research, system development, and operational programs of the Air Force and Department of Defense, other government agencies, and industry. The center maintains 63 test and simulation facilities at AEDC/Arnold Air Force Base, Tennessee, and at AEDC/White Oak, Maryland. Twenty-seven of AEDC's test and simulation facilities are unique in the United States and 14 are unique in the world. AEDC's test services are offered in the mission areas of aeropropulsion, aerodynamics, space and missiles, and test technology.

SCHEDULE FOR REVISIONS AND UPDATES

This plan will be updated every two years and will be supportive of the AFMC Program Objectives Memorandum process. This process is described in the AFMC Strategic Plan FY02-09:

> In 1998, the command produced a full-up strategic plan through a series of planning conferences and activities. The plan was updated in 1999 to reflect changes in our environment and lessons learned during plan execution. This alternating cycle of full-up plan one year and update the next allows for a more labor-intensive planning exercise during years in which a less labor-intensive programming exercise is on-going. That is, a full-up strategic plan that will eventually support a full-up Program Objectives Memorandum (POM) submission one year hence is produced in the year an Amended Program Objectives Memorandum (APOM) is being prepared. A less labor-intensive strategic plan update is done in the year a full-up POM is prepared. Having been through a full plan and update cycle in 1998 and 1999 (in support of the FY02 POM and FY03 APOM), 2000 became the year to produce another full-up plan to ultimately support the FY04 POM.

PLANNING ENVIRONMENT

GUIDANCE

AEDC will face demanding challenges in the years ahead. At the core of AEDC's May 2001 Strategic Planning Workshop was the premise that our strategies must be tied directly to those of AFMC and the Air Force. The primary guidance used to develop this plan was provided by the Air Force Vision; the Air Force Strategic Plan, with special emphasis on the Critical Future Capabilities (see Appendix); the HQ AFMC Strategic Plan, including the applicable HQ AFMC Mission Areas of Test & Evaluation (T&E), Information Management (IM), and Installations & Support (I&S) Strategic Plans; and Secretary of Defense Rumsfeld's assessment of the findings of the Commission to Assess United States National Security Space Management and Organization as contained in his letter of 8 May 2001 to the Committee on Armed Services. To supplement the guidance received from the Air Force and AFMC, the previous commander established an Independent Strategic Assessment Group (ISAG) that was managed by the Institute for Defense Analyses. The ISAG recommended that AEDC develop strategies to continue to satisfy customers, support the Air Force strategic plan, reduce overhead costs, and capture promising growth markets.

OPPORTUNITIES

There are several major opportunities that AEDC must exploit to increase its value to the nation and to our customers. We will lead in testing and evaluating systems supporting the nation's requirements for reliable and rapid access to space and dominance in space defense. Our testing and evaluation capabilities will

meet our customers' future weapon systems simulation requirements for both traditional ground-testing simulation and computer simulations of weapon systems performance. We will offer integrated test and evaluation services to traditional and new customers as we support the weapon systems acquisition cycle and acquisition reform. We will improve productivity and reduce cycle time to better meet our customers' needs for accelerated acquisition cycles. We will reduce our existing infrastructure and add improved and modernized infrastructure to support the Air Force's Critical Future Capabilities.

THREATS

The most immediate threat to AEDC is the potential cancellation of the Joint Strike Fighter (JSF) program. The projected JSF test workload represents over half of the overall AEDC test workload during the upcoming years. Even a one- or two-year delay in the program would be devastating to AEDC. Declining MRTFB budgets continue to threaten our test capability by not providing adequate resources to maintain, improve, or modernize our aging infrastructure. Defense and space contractors hire our technical work force, reducing our capabilities. National and international aerospace test and evaluation services organizations are strong competitors. DoD policy prohibits us from competing with private ground-test suppliers on the basis of price. Acquisition reform has changed the traditional manner of weapon system development from program managers directing test programs to the integrating contractor making test decisions. This allows integrating contractors to use commercial test facilities instead of MRTFB facilities, and potentially reduces the test workload, creates idle time in the test cells, and increases the unit cost of each test. In addition, reduced test workload results in highly qualified and skilled engineers and technicians finding work elsewhere, making them unavailable to support national priority programs when needed.

STRENGTHS

AEDC is well regarded for satisfying challenging technical and scheduling requirements. AEDC's wide range of test capabilities and its highly skilled and motivated work force are primary strengths. Figure 1 contains an analysis of the national security value provided by the center's wide range of testing capabilities and facilities. (Refer to the AEDC Test Facilities Handbook for details.) The analysis is presented for six classes of capability and the military mission areas served by that class. Specific test capabilities are noted parenthetically. Most capabilities offer high value in meeting military acquisition risk reduction needs. A world-class computational mechanics capability complements the test facilities and is integrated into the test processes and products. In addition to the center's technical capabilities, our recently installed enterprise wide business management software enables us to accurately identify operational costs and readiness capacities related to each test facility.

WEAKNESSES

Our 50-year old infrastructure needs recapitalization. We are experiencing an ever-increasing rate of infrastructure failures impacting test customers and programs. In FY00, we had nine major infrastructure failures; the average age of the failed infrastructure was 32 years. Our backlog of maintenance and repair is over $140 million and is growing at the rate of $10 million a year. Due to the remote location of AEDC, we do not have a reserve bank of technical personnel being employed by other activities from which we could draw if needed.

Figure 1 identifies a few test facilities that offer relatively low national security value. Sustaining these facilities drains funds away from higher priority uses.

National Security Value	Technical Value of AEDC Capability			
	Disadvantaged	Threshold	Leader	Unique
High		S3 (Bird strike assessment)	16T (JI, FM, Scale) 16S (JI, FM, Scale, Mach range) A/B/C/9 (FM, q-dot, Scale) 4T (Store separation, Mach range with CTS, acoustic bay)	16T (Missile prop., store separation) 16S (Missile prop, Mach, full-scale JI) A/B/C (Scale, cont. flow, separation) Tunnel 9 (q-dot, Scale, run time) 4T (IT&E via M&S)
Moderate				
Low	D (Non-operational) F (Non-operational) 1T (Non-oper.) ART (Non-oper.)			

a. Aerodynamic Test Facility Values for Fighter, Bomber, Mobility, Rotorcraft, Munitions/Weapons, and Space Launch

National Security Value	Technical Value of AEDC Capability			
	Disadvantaged	Threshold	Leader	Unique
High		T4 (Perform., Operability) T12 (Turboshaft)	J1/J2 (Performance, operability, and core testing) T11 (Cruise missile and small fan testing)	C1/C2 (Scale, flight envelope) T3 (Mach 4, High q, combustor capability) SL2,SL3 (Ram inlet environmental, endurance)
Moderate				
Low	T1 T2 T5 T7 (Mothballed)	SL1 (Standby)		

b. Aeropropulsion Test Facility Values for Fighter, Bomber, Mobility, Rotorcraft, and Space Launch

National Security Value	Technical Value of AEDC Capability			
	Disadvantaged	Threshold	Leader	Unique
High				J-4 (Size, altitude, soft blowback) J-6 (Size, altitude, soft blowback, safe site) APTU (scale, run time)
Moderate				
Low				J-5 (Soft blowback) J-3 (Soft blowback, mothballed) J-2A (450 kft altitude, 30-day cold soak; non-operational, deactivated)

c. Solid- and Liquid-Propellant Rocket Test Facility Values for Space Launch, Ballistic Missile Defense, Space Defense, and Munitions/ Weapons

Figure 1. AEDC Facility Values

National Security Value	Technical Value of AEDC Capability			
	Disadvantaged	Threshold	Leader	Unique
High				H1 (High power, high stagnation pressure at size-95 atm) H2 (High pressure, high power, long run duration) H3 (Size, high pressure)
Moderate				
Low	HR (Mothballed)			

d. Aerothermodynamic Test Facility Values for Space Launch, Ballistic Missile Defense, Space Defense, and Munitions/Weapons

National Security Value	Technical Value of AEDC Capability			
	Disadvantaged	Threshold	Leader	Unique
High				Range G (Large size projectiles, soft launch)
Moderate				
Low		Range S1		Range I/FPST (Evacuated chamber to 1 micron)-Standby

e. Ballistic Ranges Test Facility Values for Ballistic Missile Defense, Space Defense, and Munitions and Weapons

National Security Value	Technical Value of AEDC Capability			
	Disadvantaged	Threshold	Leader	Unique
High			AMSC (M&S, signatures measurements, analysis)	10V (Low background, size of optics) 7V (Low background, complex scene) FPCC (Low background, productivity) Decade (Scale, power)
Moderate		Mark I (Scale) 12V (Solar, thrusters)		
Low				

f. Space Environment Test Facility Values for Space ISR, Atmospheric ISR, Space Offense, Space Defense, Munitions/Weapons, and Ballistic Missile Defense

Figure 1. Concluded

AEDC VISION

VISION STATEMENT

AEDC - America's Aerospace Advantage
Developing technology for the World's Premier Aeronautical and Space Systems,
while serving as:
a Vital Component of the Air Force's weapon system development capability,
the Workplace of Choice for our people, and
the Model of Environmental Excellence for our communities

MOST DESIRED FUTURE

- Our test facilities are tailored to support our customers as they develop U.S. warfighting capabilities, especially Critical Future Capabilities.
- Business practices are customer -and supplier-friendly and are facilitated by state-of-the-art information technology.
- AEDC is the unquestioned best-value ground-test and evaluation supplier for military acquisition risk reduction for all phases of the acquisition life cycle.
- AEDC is fully integrated into a simulation-based acquisition process that relies on AEDC's premier test modeling and simulation capability.
- AEDC facilitates aerospace system development with a "customer intimate" operating model of processes, information technology, organization, culture, and management systems to deliver world-class solutions for customers.
- Our recapitalized test and support infrastructure requires 15 percent fewer personnel to deliver the same output as in FY01.
- Our operations are supported by an airfield capable of receiving all test articles.
- All mission areas and selected support functions operate as a public or private partnership.

STRATEGIES

We will address major areas of emphasis using the following model:

Vision	Where is the organization going?
Strategic Thrusts	What is our strategy?
Critical Success Factors	What do we need to do well to achieve our strategy?
Key Performance Indicators	How do we measure how well we are doing?

Five Strategic Thrusts were chosen to achieve the vision. Figure 2 shows the Strategic Thrusts and Critical Success Factors; these are based on an analysis of our opportunities, threats, strengths, and weaknesses.

Satisfy Our Customers' Needs (ST1)	Improve Business Practices(ST2)	Sustain Technological Superiority(ST3)	Operate a Quality Installation(ST4)	Enable Our People to Excel(ST5)
Deliver Customer Expectations	Accurately Identify and Allocate Cost	Maintain Facility and Support System Health and Readiness	Maintain Environmental Compliance	Match Skills to Requirements
Improve Customer Relationships	Control and Improve Processes	Optimize Facility Capacity and Utilization	Maintain Safety Standards	Maintain a Motivated and Professional Work Force
Effectively Market and Sell		Plan, Program, and Execute Integrated Investment Efforts	Provide Quality Base Support Services	
Leverage Public and Private Partnerships				

Figure 2. AEDC Strategic Thrusts (column header) and Critical Success Factors

TASKS

The Air Force Material Command Strategic Plan deployed Mission Essential Tasks (METs) and Enabling Tasks (ETs) to AEDC and the other AFMC centers. (Refer to the AFMC Strategic Plan for MET and ET descriptions. Objectives and associated performance measures were provided for each task.) According to the AFMC strategic planning guidance, AEDC's support to AFMC's tasks and objectives must be documented. This information is provided in Table 1. Table 1 shows that AEDC supports all AFMC Mission Area METs for Test & Evaluation, Information Management, and Installations & Support.

Table 1. Correlation of AEDC STs to AFMC Mission Area METs and ETs

AFMC / AEDC	TE MET 1	TE MET 2	IM MET	I&S MET	ET1	ET2	ET3	ET4	ET5	ET6	ET7
ST1	X					NA			X	X	
ST2		X				NA		X		X	
ST3			X			NA	X		X		X
ST4			X	X	X	NA					
ST5					X	NA			X		

OBJECTIVES

Critical Success Factors (CSFs) are the strategies we will use to achieve our Strategic Thrusts. By implementing these CSFs, AEDC will support relevant AFMC MET and ET Objectives. This support is indicated in the associated Action Plans.

AEDC ACTION PLANS

AFMC requires an action plan for each objective. To ensure integrated actions of center functionals are aligned with AEDC's Strategic Thrusts, action plans were prepared for each of the Strategic Thrusts.

SATISFY OUR CUSTOMERS' NEEDS (ST1)

OPR

DO

OCR

XP

LINKAGE

This AEDC Strategic Thrust is directly linked with the strategic objectives of T&E MET 1 (test and evaluate the functionality and performance of weapon and support systems) and T&E MET 2 (provide, maintain, and modernize the T&E capabilities, facilities, equipment, and ranges required to meet systems requirements). The Critical Success Factors implementing the Strategic Thrusts are: Deliver Customer Expectations, Improve Customer Relationships, Effectively Market and Sell, and Leverage Public and Private Partnerships. These are designed to thoroughly understand the DoD aerospace customer strategic and tactical requirements to deliver the customers' requirements on target, reduce the actual cost of test and development by maintaining an effective balance of workload with capacity, and partner with the customers to reduce cycle time and risk.

ACHIEVEMENT STRATEGY

The strategy to satisfy our customers' needs and develop new customers is to continue to improve the delivery of high-quality, timely customer expectations; continue the maturation of the appropriate best industry processes at AEDC; increase marketing effectiveness; and expand and leverage our strategic public and private partnerships for improved technical capability at reduced cost. AEDC has a fifty-year legacy of delivering benchmark quality technical services. Accomplishments include:

- Sustained a fifty-year history of delivering the highest quality technical T&E services
- Developed an integrated, multilevel customer relations model
- Made progress in moving toward a customer-driven culture at AEDC
- Secured several long-term, dedicated service contracts to major customers
- Established formalized marketing programs in each business area
- Established a corporate marketing program

The approach is to maintain the industry best-quality technical services and build solid customer relationships. Details of the specific actions to be accomplished are described below.

DELIVER CUSTOMER EXPECTATIONS

To sustain the AEDC national defense mission and support of the warfighter, it is absolutely imperative that AEDC satisfy its customers' needs and maintain and increase its customer base. We must do this while maintaining close ties with AFMC test centers and organizations. The right balance between capacity and workload provides for effective maintenance and upgrades to the T&E capability and infrastructure. Delivering all customer expectations is a necessary requirement to grow the customer base. AEDC must deliver quality service, meeting customers' technical objectives while satisfying their cost and schedule requirements. The following are specific Key Performance Indicators that must be satisfied as part of a balanced approach to meeting and exceeding customer requirements for technical performance, cost, and schedule:

- Thoroughly understand customer requirements
- Deliver customer requirements through responsible planning and effective execution of cost, schedule, and performance goals in test and evaluation projects
- Continue to establish and achieve customer satisfaction goals through customer service and infrastructure investments

IMPROVE CUSTOMER RELATIONSHIPS

A prominent characteristic of industry leaders is the ability to thoroughly understand their chosen customers' requirements and deliver superior customer service accordingly. AEDC has always been a customer-focused organization. In today's environment, it is imperative to elevate customer relationship management to maintain current customers and attract new customers. An integrated, multilevel customer relationship model was developed in FY98. The model has been executed for a limited number of major customers with great success. The appropriate form of this relationship model will be adopted as standard practice for all major AEDC customers. Other supporting processes in product delivery and customer service must also be developed and instituted. Key performance indicators are:

- Develop and maintain relationships and alliances with major customers
- Develop AEDC customer service processes to deliver superior on-site service
- Develop timely and informative customer feedback and problem resolution processes
- Develop a total customer service and awareness culture throughout the AEDC work force through training, management emphasis, and individual performance expectations
- Improve customer contact skills for principal AEDC customer interface personnel

EFFECTIVELY MARKET AND SELL

We must know and understand the market segments in which we can effectively support the customer and maintain a competitive advantage. This will enable us to make wise investments for the future health and protection of capabilities critical to the warfighter, and to divest those capabilities that can best be satisfied elsewhere. The Critical Success Factors will emphasize effective marketing and sales discipline to maximize return on resource investment. Strategic marketing and sales capture targets will focus on those markets that are pertinent to the AEDC mission, provide a strong source of revenue, and have a high probability of capture within the reality of the competitive and political environment. The Key Performance Indicators are:

- Maintain long-term business development strategies to ensure future health based on market research, customer feedback, and current and projected environmental realities
- Implement an effective process for accumulating, analyzing, and communicating market trends, market requirements and forecasts, and customer feedback to develop market leader strategies
- Link business development requirements to drive infrastructure capacity and investment planning
  - Integrate use of the business development portfolio for infrastructure planning (plants, facilities, and human resources)
  - Implement facility and capability measures into the marketing and sales planning and forecasting processes
  - Define, design, and implement “e-business” links between appropriate AEDC systems
- Clearly define business area market segments and business development targets based on objective selection criteria
- Standardize the process for planning and communicating actions for capturing business including capture plans and detailed revenue forecasts

LEVERAGE PUBLIC AND PRIVATE PARTNERSHIPS

AEDC is facing increasing pressures that impact its ability to sustain and improve the T&E capabilities necessary to ensure the warfighter has the best technical and most reliable aerospace equipment. AEDC’s appropriated budget has decreased in real dollars consistent with the national defense budget. Fewer new military development programs have resulted in a decreased workload and, therefore, available revenue for maintenance and improvement. There is greater competition for limited budgets for new facilities and major construction and improvement programs. Often, decisions to allocate these funds are political with the stronger states and regions receiving favorable consideration. It is essential that AEDC leverage strategic partnerships and alliances with other public and private entities to share technologies and investments, guarantee strong sustained workloads, build powerful political and economic coalitions, and develop regional unity for mutual benefit. Key performance indicators for this Critical Success Factor are:

- Evaluate existing relationships for strategic value
  - Determine appropriate disposition
- Continue to develop and strengthen evolving relationships such as
  - Valley Corridor Summit, Inc.
  - Tennessee Valley Economic Coalition (TVEC)
  - Trilateral Alliance (AEDC – DoE/Oak Ridge – NASA/MSFC)
  - Various major customer alliances and contracts
- Develop an approach to secure new strategic opportunities, such as
  - Partnerships with turbine engine manufacturers and DoD programs for technology development and data analysis
  - Long-term T&E agreements with major customers
  - Liaison positions with major space and missile customers

- Develop strategies and targets for leveraging investments and/or using AEDC test and real property assets
- Develop requirements and implement business policies that are more conducive to public and private partnerships
  - Contracting
  - Pricing
  - Access

MILESTONES

Table 2. Milestone Schedule

Action	OPR	Date
Thoroughly understand customer requirements	DO, XP	Ongoing
Establish and achieve aggressive customer satisfaction goals	DO	Annually
Develop and maintain key relationships and alliances with major customers	DO	Ongoing
Develop AEDC customer service processes	DO, XP	FY02
– Continued improvement	DO, XP	Ongoing
Pursue cooperative ventures with other test centers	DO	FY02
Develop customer-centric culture	DO, XP	FY02
– Execute and improve	DO, XP	Ongoing
Clearly define business area targets	DO	Ongoing
Standardize process for planning and communicating actions for capturing business	XP, DO	Complete
Implement effective process for accumulating market data	XP	FY03
Link business development requirements	XP, DO	FY02
Evaluate existing relationships for strategic value	XP	FY02
Continue to develop evolving relationships	XP, DO	Ongoing
Develop strategy for new opportunities	XP, DO	FY02
Implement strategy for new opportunities	XP, DO	Ongoing
Develop strategy for leveraging investments and/or use of assets	XP	FY02
Develop requirements for policies conducive to public and private partnerships	XP, PK, FM, DO	FY02
Implement policies conducive to public and private partnerships	XP, PK, FM, DO	Ongoing

RESOURCES

The additional resources required to achieve this thrust are depicted below.

Fiscal Year	02	03	04	05	06	07	08	09	TOTAL
Requirements ($M)	4	6	6.2	6.4	6.6	6.8	7.0	7.2	50.2

BASELINE

AEDC has been recognized as the most technically capable aerospace test and evaluation facility in the world since its creation in the early 1950's. It still maintains that international position today. Customer sat-

isfaction has decreased recently mostly due to problems with aging support infrastructure and increased prices. Increased prices are largely a result of the overhead burden associated with sustaining the T&E capabilities with insufficient appropriations and workload. The need to market and sell AEDC T&E capabilities was recognized and practiced somewhat beginning in the early 1990's. A formal marketing and sales program began in FY98 with a corporate marketing effort and the establishment of marketing and sales efforts in each business area. Since then, the program has gained executive support and has steadily increased in sophistication. Significant maturation occurred in FY01 through increased training and the import and standardization of business development processes. AEDC has had recent successes with three long-term business agreements. These agreements can be strengthened and additional ones can be secured with better marketing and sales processes and more customer-friendly business policies and practices.

PERFORMANCE MEASURES

- Completion of milestones and action items
- Customer satisfaction metrics
- Revenue and market share metrics
- Revenue, investments, and/or equivalent value of goods and services realized through partnerships and alliances

EXIT CRITERIA

- Completion of specific milestones and actions
- Implementation of processes and capabilities
- Marketing and sales activities are ongoing
- Development and management of partnerships, alliances and agreements are ongoing

IMPROVE BUSINESS PRACTICES (ST2)

OPR

FM

OCR

SD, DO, XP, PK

LINKAGE

This AEDC Strategic Thrust links directly to the AFMC's Financial Management Enabling Task and AEDC's metric-driven processes (notably, AEDC's two support contractors award fee process).

ACHIEVEMENT STRATEGY

Sound financial management is the bedrock foundation and an essential step to define and execute this strategic thrust: Improve Business Practices (ST2). AEDC is transitioning from a failed commercial-off-the-shelf (COTS) cost accounting system (CAS) with associated processes to a Chief Financial Officer (CFO) act-compliant Air Force Standard CAS (JOCAS II) with Generally Accepted Accounting Procedures (GAAP) standards-driven practices and policies.

AEDC has developed two Critical Success Factors (CSFs) to achieve Strategic Thrust 2. They are: *Accurately Identify and Allocate Cost*, and *Control and Improve Processes*.

To achieve the Critical Success Factor, *Accurately Identify and Allocate Cost*, AEDC is installing CFO-compliant CAS and other automated systems with related standards-driven policy and practices to make program-funding decisions, and to analyze options. This will continue to expand our understanding of the cost of testing and will enable us to identify and implement improved business practices.

Once a CFO-compliant standards-driven CAS and associated policies and practices are implemented (31 Mar 02) enterprise processes and controls will be developed to achieve the second critical success factor, *Control and Improve Processes*. Improved processes will be linked to the award fee process and to the center's enterprise process management system. Major milestones for this CSF are shown in Table 3.

MILESTONES

Table 3 displays the tasks associated with this objective.

Table 3. Improve Business Practices Milestone Schedule

Task	OPR	Date
Validate CSFs	FM	Complete
Survey governing law, DOD, and Command Policies to baseline center financial practices/policies	FM	31 Jan 02
Complete JOCAS II CAS installation	FM	31 Mar 02
Complete study on AEDC Costed Entity	FM	31 Mar 02
Identify first round of cost-effective improved business practices (includes implementation schedule)	DO/SD	30 Jun 02
Link center metrics to ST2 KPIs	PK	30 Sep 02
Create and document the AEDC processes for ST2	FM	30 Sep 02
Identify objectives and goals for second round of improved business practices	DO/SD	31 Dec 02
Implement Continuous Process Improvement	FM	Ongoing

RESOURCES

For the POM years FY03-09, this effort will require approximately two manyears of effort for monitoring, tracking, and reviewing/implementing process enhancements.

BASELINE

Currently, AEDC has numerous KPIs to track progress toward meeting ST2. Many of the KPIs are managed through the Technical Area Manager for test operations and support activities. FM will conduct monthly stakeholders meetings with DO/PK/SD to improve business practices and processes aimed at increasing efficiency and effectiveness of AEDC's test products and services.

EXIT CRITERIA

This is an ongoing continuous process improvement program and, as such, has no exit criteria.

SUSTAIN TECHNOLOGICAL SUPERIORITY (ST3)

OPR

XP

OCR

DOO, XPX, DOI, SDC, SDF, SDT

LINKAGE

Strategic Thrust 3 addresses readiness and reliability, utilization, right-sizing, and investment in test capabilities and communications/computer infrastructure. Therefore, this thrust supports:

- AFMC's Strategic Assessment ET (SA Objective 1), Business Practices ET (BP Objectives 1 and 4), and Infrastructure ET (INF Objectives 1, 2, 3, and 4).
- AFMC Mission Area METs and Objectives
  - TE MET 2 (Objectives 2.1 and 2.2)
  - IM MET 1 (Objectives 1, 2, and 3)

This Strategic Thrust also aligns AEDC capabilities with projected Air Force Critical Future Capabilities and DoD-wide warfighting development and sustainment activities from FY02 through FY10.

ACHIEVEMENT STRATEGY

AEDC developed three CSFs to achieve this Strategic Thrust:

- Maintain facility and support system health and readiness
- Optimize facility capacity and utilization
- Plan, program, and execute integrated investment efforts

The scope of the infrastructure includes test cells, test facility plants, communication and computer assets, and real property.

MAINTAIN FACILITY AND SUPPORT SYSTEM HEALTH AND READINESS

This CSF addresses improving asset health and readiness to satisfy our customers with fewer people, reliable equipment, and competitive prices by reducing lost test time, test interruptions, and operations and maintenance costs. Our strategy for reducing costs continues to encompass the same goals as when we started our journey to a better, more proactive maintenance program. First, we desire increased preventive maintenance (PM) effectiveness. This will be accomplished through improving procedures and documentation, making the transition to decreased calendar-based PMs through age exploration, and increasing run-time and conditioned-based PMs. We will continue to move closer to an asset-focused, reliability-based program with increased analysis and diagnostic capabilities. Secondly, we will focus on increasing the skill levels of our personnel through competency training and cross training between different areas. Thirdly, we will improve our operational procedures to reduce wear and tear on the equipment and improve the operational environment. Finally, we will continue to leverage the earlier reengineering efforts by implementing an asset management program. The overall effect of these initiatives will be improved equipment

availability, reduced lost test time, increased reliability, and decreased corrective maintenance at the same time that preventive maintenance costs remain constant or increase slightly. We will accomplish these improvements through several initiatives:

- Condition-based maintenance utilizing predictive maintenance (PdM) technologies
- Reliability analysis with improved data from our Computerized Maintenance Management System
- Reliability centered maintenance concepts utilized to identify failure modes and preventive actions to avoid these failures
- Preventative Maintenance (PM) procedure streamlining to ensure that each procedure is accurate, targeted to specific failure modes, and the periodicity is established through age exploration
- Equipment risk reduction through timely accomplishment of PM procedures
- Test measurement diagnostic equipment (TMDE) program implementation
- Multiskills training that will qualify our craft employees across multiple areas, enhance their skills, and provide a certified reliability engineer program for our system managers
- Asset management implementation to provide system lifecycle configuration management and data for integration with other initiatives
- Tool control programs that maximize accountability and control and avoid discontinuity of work because of tool unavailability
- Integrated operations and maintenance planning and scheduling to minimize conflicts and maximize utilization of facilities
- Additional initiatives that will be sought during each subsequent planning cycle

In addition to the initiatives above, which apply to test assets, there is a need to improve the condition of the support infrastructure. AEDC's current Infrastructure Condition Index is 52 percent. The AFMC goal is to improve the index to 72 percent by FY09 and 75 percent by FY12. The achievement strategy is to continue proactive design activity to prepare efforts for funding and execution, advocate programming of required funds, and maintain a baseline and surge capability to implement approved efforts.

OPTIMIZE FACILITY CAPACITY AND UTILIZATION

This CSF leverages outputs from AEDC's long-range planning and business development portfolio processes. These processes gather DoD and government-wide requirements and support two complementary assessments that contribute to the optimization of AEDC. The first assessment concerns AEDC's technical capabilities to meet the requirements in light of national and international alternatives. This assessment is the basis for integrated and right-sized infrastructure, investment, and maintenance plans that will meet the requirements. The time interval for evaluating requirements is approximately 25 years, and the planning horizon is aligned with the Program Objectives Memorandum. An annual workload adjustment process is coupled with the long-range processes. The workload adjustment sizes the work force to meet business, investment, and maintenance objectives for each fiscal year. The adjustment is guided by available appropriated resources and customer revenue.

The second assessment concerns real property requirements. AFMC is currently funding an assessment that will establish a real property end state and a center right-sizing plan by the first quarter of FY02.

The assessments indicate a need for modest divestment of technical facilities and a reduction of real property per draft plan. AEDC's contractors are developing proposals to accomplish the divestment. Specific performance measures will be established by Oct 2002 to measure results. Performance measures for real property will be established after the plan is completed.

Optimization involves more than technical capability and real property right-sizing. AEDC is exploring systematic ways to optimize utilization of assets, including utilization performance measures. Utilization of capital and human resources is a complex issue, and there is not a mature understanding of the desired outcomes and performance measures. The general principle of greater efficiency and effectiveness resulting from high utilization applies and must be balanced with customer-driven workload variability and national security readiness requirements. Cross-skilling is essential to high human resource utilization. Capital asset utilization is inherently a function of marketing and national investment in aerospace systems. Candidate performance measures such as Percent of High-Performance Computer Capacity Utilization, Test Facility Reserve Capacity Costs, and others will be explored to promote more effective utilization.

PLAN, PROGRAM, AND EXECUTE INTEGRATED INVESTMENT EFFORTS

Based on specific business requirements, AEDC has created an investment portfolio that supports Air Force and other DoD customers. The portfolio contains investments that are funded by AEDC, Air Force military construction, and Air Force and DoD test investment funds. This portfolio is a basis for AEDC's internal resource allocations and the center's inputs into external programming and allocation processes. In addition to internal AEDC, Air Force, and DoD processes, the proposed investments and capabilities must be defended in the DoD/NASA National Aeronautical Test Alliance forum.

AEDC's contribution to AFMC's T&E objective 2.1 has been met by the business portfolio process. Performance measures for successful advocacy, as well as execution of approved investments, drive achievement.

The achievement strategy subcomponents are as follows:

A. Identify investments that will support new generation weapon systems testing needs

B. Determine investments that will reduce operational test costs

C. Plan for execution of critical maintenance and repair on needed test assets, and deactivate test facilities as integration/automation/modernization takes place

Investments to Support New Generation Weapons

Various investment programs have been planned, programmed, and are executed (or will be when funding starts) in order to support the warfighters' high-technology developmental needs. Those programs that are planned for execution by FY07 include Advanced Instrumentation and Data Control System (AIDACS), Wind Tunnel Virtual Flight Test capability, Hypersonic Upgrade, Kinetic Energy Weapon (KEW) Lethality, and Space Chamber Optical Sensing test capability. A summary of each of these investment programs is given in Table 4.

Table 4. Investment Programs to Add New Capabilities

Investment Program	Year/$M	End Product
AIDACS	FY02-07/ $30.0	Capability to provide all needed data to customers near-real-time at their sites. Pressure-sensitive paint, smart sensors, and fly-the-mission capability will be provided. AIDACS will do for the test and evaluation community what Internet has done for the e-commerce. (customers: JSF, F-22, F-119, and others)
Wind Tunnel Virtual Flight Test	FY03-07/ $19.6	Capability to test full-scale missiles or A/C scale models using active flight controls. This project will produce a new, needed capability of simulated flight for DT&E and OT&E (customers: AAC, NAWCWPNS, BMDO, and AFFTC)
Hypersonic Upgrade	FY02-05/ $10.4	Capability to support Mach 8 in APTU (customers: Air Force HyTech and FRSW; Navy Area defense; Arrow II and THAAD)
KEW Lethality	FY02-05/ $4.5	Capability to perform lethality testing at 6 to 10 km/sec (customers: BMDO, THAAD, Navy Upper Tier, and AIT)
Space Chamber Optical Sensing	FY04-06/ $11.5	Capability to support full-scale target weight, target coning and higher simulation and measurement for missile and RV signature data gathering

There are various other investments that will provide needed capability for future test requirements that are not listed in Table 4. They include Tunnel 16T High Reynolds Number Enhancement, Enhanced Turbine Engine Installation and Productivity, Real-Time Display and Analysis System, Improved Turbine Engine Structural Integrity, Mach 3.8 Capability, J-4 Efficiency and Duration Capability Upgrade, Hypersonic Weapons Development Test Capability, and Tunnel 16S Mach 6 Capability. Most of these projects are targeted for funding in FY08 and beyond.

Investments to Reduce Operational Costs

One of AEDC's main interests is to reduce the cost of testing for its customers and stakeholders. Process improvement (use of six-sigma principles), cross-training (multidisciplinary) of work force, and automation and integration of facilities are primary cost reduction strategies. This section deals with the facility investment component of the overall AEDC cost reduction strategy.

The vision for the continuous flow test units is to tightly integrate test, plant, and utility operations such that these three distinct operational elements function as a single cohesive system. To achieve this tightly integrated system, the plan is to automate and consolidate many functions that now are manually controlled. Through consolidation and automation, AEDC will eliminate several satellite equipment rooms for each of its plants and utilities. For consolidated plant operations, the vision is to establish one single space where control and monitoring of all AEDC plants occur. Integration of major investments includes PWT Sustainment Program, Test Operation Modernization and Integration Project (TOMIP), Propulsion Consolidation and Streamlining (PC&S), Advanced Instrumentation and Data Collection System (AIDACS), Real-time Display & Analysis System (RDAS), and Test Utility Process Modernization (TUPM) initiative plus various smaller I&M and M&R projects as needed to meet the vision. Table 5 provides a summary of major projects.

Table 5. Investment Projects on Test Cost Reduction

Investment Program	Year/$M Remaining	End Product
PWT Sustainment	FY98-04/ $42	Reduced more than $1M in cost of testing in 16T and 4T annually. This is due to the new dryer facility. Prior to the new dryer, there was only one dryer, and when depleted, (desiccant absorbs moisture and saturates and has to be heated) testing could not be continued until heater reactivation was done (12 hours to do this) or until customer bought dry air from refrigeration plant in ETF at a significantly higher cost. Cost savings are due to less lost test time (12 hour delay to dry out desiccant) and less expensive dry air (no longer have to purchase expensive dry air from ETF refrigeration plant).
TOMIP	FY98-03/ $5.5	No significant savings incurred yet. Benefits will be achieved upon completion of project. Upgrades and consolidates control processes and capabilities in the A, B, and C plants at AEDC. Improves safety/reliability of the ETF plant operations. Reduces cost of testing by $4M/year starting in FY04.
PC&S	FY00-09/ $215	Phase 3 MILCON ran ducting from the SL supply line into the A-Plant process air system. This has provided capability to supply C-Plant air to T & J cells, which is the first step in getting A&B plants ready to shut down airsides. A-Plant airside compressors scheduled to be deactivated 2nd quarter of FY02. Deactivation of B-Plant airside will be after phase 4 late FY03 or early FY04.
RDAS	FY02-08/ $19.2	No significant savings realized yet. Benefits will be achieved upon completion of project. Increases reliability, availability, maintainability, and survivability of test facilities infrastructure. The payback period is about 5 years. Saves an estimated $4M/year.
AIDACS	FY02-07/ $29.0	No significant savings realized yet. Benefits will be achieved upon completion of project. Described in Table 4. Reduces the cycle time and gets data to customer near real time. Saves some major programs $2-5M/day.
TUPM	FY01-06/ $40.6M	This is a new initiative. No significant savings realized yet. Benefits will be achieved upon completion of project. Automates, consolidates, modernizes, and integrates AEDC test utility process and assets to reduce the test utility cost by $8.5M/year. Its payback is in 5 years. TUPM also provides for reliability and safety of operating a system that is very old.

Table 5 depicts those projects that are currently programmed for funding (except for TUPM) and have a six- to seven-year completion period. There are various other projects that are planned for execution starting in FY08.

Critical Maintenance and Repair

AEDC maintains an estimated $7.1 billion of infrastructure with a substantial portion of test equipment dating to the 1940s. The equipment age and associated reliability and maintenance problems are impacting the ability to satisfy customers' requirements. Although AEDC's vision is to modernize, integrate, automate, and develop new high-tech test capabilities, the lack of current maintenance and repair (M&R) funds is creating major potential risks. The risks are facility failures impacting test program schedules or facility failures damaging a test article or injuring personnel.

There is currently a $30M critical M&R backlog at AEDC. Strategic planning is needed to meet these critical M&R requirements. Table 6 illustrates some examples of the critical M&R at AEDC.

Table 6. AEDC Critical M&R Summary

Critical M&R Category	Aeropropulsion/Aircraft/Space and Missiles
Test Cell Systems	Control valves, valves, model injection, controls, etc.
Plant Systems	Compressors, motors, valves, PWT and VKF plant systems, power panels, fuel systems, heater controls, freeze protection, temperature conditioning, etc.
Control Systems	VFSS controls, controls and annunicator, sensors, gaseous monitoring system, control valves, etc.

In addition to the test and support infrastructure, information management assets require investment to achieve AFMC Information Management objectives. The following initiatives are central to AEDC's information management investment effort:

- Engineering and Installation
- Network Services Plan
- Corporate Architecture and Performance Standards
- Combat Information Transport System/Network Management System/Base Information Protection
- Land Mobile Radio Narrow Band Frequency Migration
- Server consolidation
- AF Portal
- Enterprise Systems Management
- WIN2K/Active Directory
- Life Cycle of Information
- Software Solution Plus LISS+
- Network Operations and Security Center
- Centralized Network Control Center

MILESTONES

MAINTAIN FACILITY AND SUPPORT SYSTEM HEALTH AND READINESS

- FY01 – Determine resources for new initiatives, acquire funding for all efforts and review and validate current performance measures
- FY02 – Establish new baselines for performance measures (if necessary) and continue implementation of initiatives while successfully achieving performance measure goals
- FY03 – Continue implementation of initiatives while successfully achieving performance measure goals
- FY04 – Ensure seamless transition and continuation of initiatives between current contract and new contract
- FY05 and beyond – Continue to implement new initiatives that support sustainment of the AEDC test capability

OPTIMIZE FACILITY CAPACITY AND UTILIZATION

- Provide facility Technology Requirements Document to AEDC/DOT by December of every year
- Complete the Test Capability Requirements Document by September of every year and use in support of DoD Reliance, AF/TE Mission Support Plans and other activities.
- Develop performance measures for utilization by 10/02

- Install HPCMO Upgrade (FY02 funded) by 10/02
- Post-Upgrade Brief to HPCMO 4/03
- Submit FY04 HPCMO proposal 5/03
- Complete long-range requirements and portfolio process by 31 May of each year
- Estimate the cost and human resource impacts of divesting the following assets as early as possible in FY02
  - Test cells T-1, T-2, T-3, T-12, J-2a, J-3, J-5, HR
  - Plants: GN2 plant, A&B airside, A&B exhaust

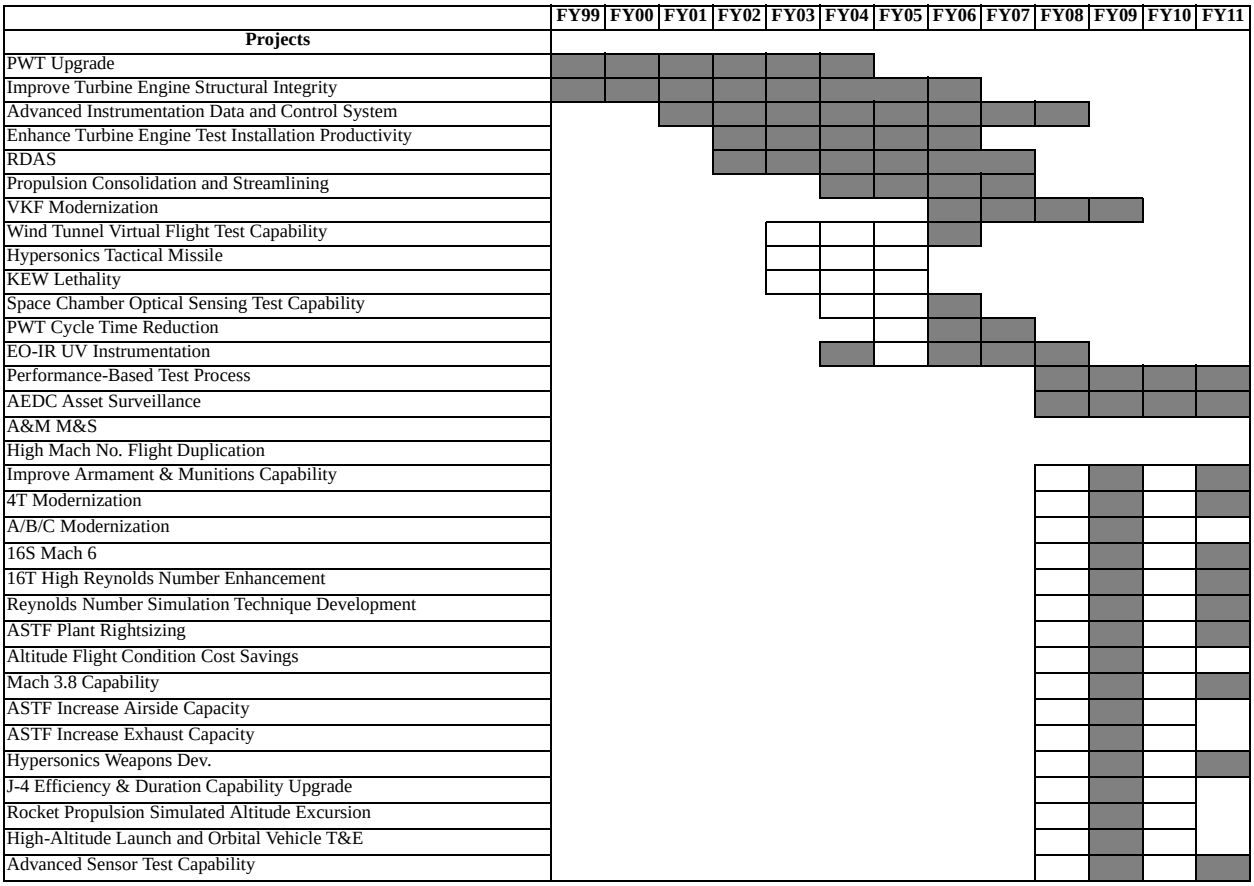
PLAN, PROGRAM, AND EXECUTE INTEGRATED INVESTMENT EFFORTS

Table 7 depicts a summary of milestones for the objectives identified in the previous section. This table captures all projects that contribute to adding capability and/or reducing test cost. These projects are funded throughout I&M and CTEIP programs. There are various other MILCON-funded projects that support AEDC's overall strategy of reducing test cost, providing needed high-tech test capability, and providing for a reliable and available infrastructure. Some of these projects such as the "Upgrade Hypersonic" and "PC&S" were outlined in a previous section. Other MILCON projects are planned/programmed for funding and execution FY02-12. The OPR for all projects depicted in Table 8 is AEDC/DOI. The OPR for MILCON projects is AEDC/SDF.

Milestones for communications and computer improvements are:

- Implement convergence of voice, video, and data at all bases — 30 Aug 06
- Implement convergence of classified systems — 30 Aug 07
- Implement convergence of unclassified voice, video, and data across the DISN — 30 Aug 09
- Complete Air Force Enterprise Systems Management Implementation — 30 Jun 02
- Complete Air Force Portal Project — 30 Jun 05
- Complete Base Telephone CAPS Project — 30 Sep 07

Table 7. Investments Milestones



RESOURCES

The Facility and Support Systems Health and Readiness initiative will be accomplished using available manpower resources. Funding listed below includes recurring annual work normally accomplished to maintain the AEDC test mission area infrastructure and is the requirement for the test mission area only. Support facility maintenance initiatives will be rolled into the test mission area data, providing a complete AEDC maintenance focus in future FYs.

Fiscal Year	02	03	04	05	06	07	08	09	Total
Test Mx ($M)	27.34	26.00	24.96	25.48	26.01	26.55	27.10	27.67	211.09

Note: TMDE and Configuration initiatives are currently being assessed and are not included in the above numbers.

Support infrastructure maintenance resources needed to achieve the Infrastructure Condition Index (ICI) goal of 72 percent by FY09 are tabulated below.

Fiscal Year	02	03	04	05	06	07	08	09	Total
Recurring Maintenance ($M)	15.4	15.2	15.0	14.8	14.5	14.0	13.5	13.0	115.4
Nonrecurring ($M)	13.8	8.2	6.8	4.9	3.8	2.9	2.5	2.0	44.9
Total ($M)	29.2	23.4	21.8	19.7	18.3	16.9	16.0	15.0	160.3

The total funding requirement for AEDC planned investment programs to reduce test cost, provide needed test capabilities, and improve critical infrastructure support is provided below.

Total ($M)/Year	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	TOTAL
Total (I&M, CTEIP, and MILCON)	49.5	77.9	55.0	68.4	63.6	54.5	67.7	81.9	518.5

The critical M&R requirements are at $30M. These are maintenance and repair requirements that need to be accomplished soon. Because of funding constraints, a three-year funding increase of $10M/year is recommended for FY02 - FY05.

The resources to accomplish real property restructuring will be determined in early FY02.

Resources to achieve Information Management Mission Area (IMMA) objective 1 (architecture to support convergence of voice, video, and data systems over an integrated communications network to the desktop by FY09) are centrally funded by HQ AFMC and the Air Force Communication Agency (AFCA) through the Combat Information Transport System (CITS) program and other sources. The total required funding is $5.5M. Funding should begin in FY02 at $2.3M, increase to $2.6M in FY03, then decrease to $0.3M in FY04, $0.2M in FY05, and $0.1M in FY06. Voice Over IP is an uncertain requirement at this time since neither the AFMC Network Services Plan nor the AFMC Base Telephone Services Plan addresses this telephone infrastructure. A rough estimate for this requirement is 3000 telephone units at $600/unit or $1.8M in addition to the resources already discussed. The timeline required for this funding is TBD.

Resources to achieve IMMA objective 2 (Maximize product/service output efficiency, improve performance, and reduce overhead by FY06) are centrally funded by HQ AFMC. AEDC requires $18M/year from FY01 to FY02 (FY01$) to meet this objective. These resources support AFMC-standard network seat costs and AEDC-specific seat costs for our business systems needed to support our outsourced operations.

Resources to achieve IMMA objective 3 (AF Information Enterprise and eBusiness, eCommerce, and eProcurement by FY06) are provided by both AFMC and AEDC. AFMC furnishes the required hardware and software. AEDC provides installation labor. Labor requirements are not determined at this time.

Resources to continually adjust our High Performance Computer capacity are based on the expectation that customer demands will double every two years. This will cost $5M (FY01$) every two years starting in FY02.

BASELINE

MAINTAIN FACILITY AND SUPPORT SYSTEMS HEALTH AND READINESS

For test facilities, several initiatives are currently in progress, and performance is measured against baselines established in FY97. These baselines will be reviewed for application towards integrated efforts and new initiatives. Adjustments will be made consistent with FY01 WBS structures and new baselines established as of the end of FY01 (action accomplished during first quarter of FY02). For support infrastructure, the ICI baseline is 52 percent in FY01.

OPTIMIZE FACILITY CAPACITY AND UTILIZATION

- Facility Capability and Cost
  - Baseline capability – as of 1 Oct 00
  - Baseline cost – Effort T contract costs for WBS element 2 as of 1 Oct 00
- For High-Performance Computer (HPC) real-time utilization: FY01 utilization of less than 1 percent
- For non-AEDC HPC resources utilization: FY01 utilization of 10 percent

For HPC capacity: FY01 HPC capacity

PLAN, PROGRAM, AND EXECUTE INTEGRATED INVESTMENT EFFORTS

Each funded investment effort has a project management plan containing a baseline. This baseline includes performance requirements, design specifications, scheduling requirements, and funding requirements.

PERFORMANCE MEASURES

MAINTAIN FACILITY AND SUPPORT SYSTEM HEALTH AND READINESS

Test facility measures are:

Maintenance Productivity

- Improve the productivity of our facilities and processes by 5 percent per year

Performance

- Complete TBD percent of proactive maintenance

Quality

- Achieve 93 percent user available test time by FY09

Availability

- Make TBD percent of plant and ID&C equipment available

Integrated Scheduling

- Schedule effectively

Equipment Risk reduction

- Reduce PM Backlog

Cost/Schedule Performance

- Minimize cost variance for initiatives
- 100 percent on time

Support infrastructure measures are number of work orders, emergency versus proactive maintenance activity, and ICI.

OPTIMIZE FACILITY CAPACITY AND UTILIZATION

- Complete divestiture and determine actual cost and human resource impacts for the following assets by the indicated dates:
  - Test Cells by 30 Sep 02: T-1, T-2, T-3, T-12, J-2a, J-3, J-5, HR
  - GN2 plant by 30 Sep 02
  - A&B airside plant by date consistent with investment project plan
  - A&B exhaust plant by date consistent with investment project plan
- Decide further divestiture and new capability actions by 30 Sep 02
  - VKF main plant high pressure replacement
  - Space Ground Test Center
  - Determine need to retain SL-1, T-11, T-4 and R cells
- HPC utilization performance
  - Real-time test support 3, 4, 5 percent of available processor hours by 30 Sep 02, 03, 04, respectively
  - Increase AEDC utilization of non-AEDC HPC resources to 25 percent of total in FY02, 27.5 percent in FY03, and 30 percent in FY04
  - Match available HPC support with requirements in the band of 60 to 70 percent

PLAN, PROGRAM, AND EXECUTE INTEGRATED INVESTMENT EFFORTS

Test facility-related performance measures are the following:

- Complete annual business portfolio update by 30 Apr of each year.
- Identify funding of critical investment portfolio items in POM inputs.
- Complete technical capability investment program within established Cost, Schedule/Status, and Reporting (CSSR) tolerances. All projects are managed based on cost, schedule, and performance measurement criteria. The CSSR format will be used for program control.
  - Schedule: Actual schedule will be compared to current schedule and any deviation noted. Milestones will be established to a “level-of-effort” and compliance monitored. Plan of action will be taken to correct any schedule deviation that would impact program scope and baseline. Schedule is managed within a 10-percent deviation band.
  - Cost: Earned value formulas will be in place before execution of each program. Positive earned value will be the main strategy of cost management. Cost management will be tied to the “level-of-effort” milestone accomplishment. Cost will be managed within a 10-percent band of planned activities.
  - Performance: Various measures will be in place depending on the lifecycle phase of each project. Validated customers requirements are identified in baselines and tracked for accomplishment. These requirements are translated in technical specifications and managed through “level-of-effort” and work breakdown structures (WBS). Each requirement will have a checkout and validation plan, and will be managed by each WBS task manager.

Performance measures for communications objectives are:

- Integrated Communications Network - Converge classified and unclassified voice, video and data systems over an integrated communications network by the end of FY09

- Air Force Information Enterprise – Implement eBusiness, eCommerce, and eProcurement, and enhance the development of the knowledge worker by the end of FY06
- Corporate Architecture and Performance Standards - Consolidate, modernize, and/or reengineer IM infrastructure in accordance with Corporate Architecture and Performance Standards for all IM product lines by end of FY06
- Secure an electronic platform to enable Operationalizing Information Assurance by FY06

EXIT CRITERIA

- Optimize required facility capacity and utilization
  - Divestment actions – Completion of divestment
  - Utilization – Since specific utilization outcomes will be developed in FY02; no exit criteria is specified at this time
  - High-Performance Computer Utilization and Capacity - HPC support is a continuous activity for which utilization and capacity standards will be adjusted periodically; no exit criteria
- Maintain Facility and Support Systems Health and Readiness
  - Quality performance targets will have been achieved
  - Processes support the viability of AEDC infrastructure,
  - Costs are within competitive bounds.
- Plan, program, and execute integrated investment efforts
  - Objectives will be accomplished when the baseline capability is checked-out and validated per customers' requirements within the programmatic constraints of cost and schedule

OPERATE A QUALITY INSTALLATION (ST4)

MAINTAIN ENVIRONMENTAL COMPLIANCE

OPR

SDE

OCR

NA

LINKAGE

AEDC has an ongoing environmental program that addresses the four pillars of environmental directives: 1) restoration of 110 Solid Waste Management Units; 2) resolution of environmental compliance issues driven by the State of Tennessee and the Environmental Protection Agency; 3) execution of pollution prevention efforts to minimize future environmental risks; and 4) conservation of the AEDC's 40,000 acres. This effort links directly to the Installations and Support Mission Area (I&S MA) objective of maintaining support services at standard levels of performance.

Current primary I&S MA initiatives are:

- Implementation of the Corrective Action Management Plan (CAMP)
- Execution of the Integrated Natural and Cultural Resource Plan
- Identification of compliance through pollution prevention alternatives
- Monitoring of all AEDC compliance permits

ACHIEVEMENT STRATEGY

The strategy to ensure total compliance with all environmental permits, plans and requirements is multifaceted. Meeting the current and future requirements will be achieved by planning and programming, continued environmental audits and inspections in the workplace, and execution of compliance plans.

MILESTONES

Tasks	OPR	Date
Corrective Action Management Plan	SDE	30 Sept 07
Sikes Act Compliance (Conservation)	SDE	30 Nov 01
Integrated Natural & Cultural Plan	SDE	30 Sept 05
NPDES Permit Renewal	SDE	30 March 02
Storm Water Permit Renewal	SDE	30 June 02
RCRA Storage Permit	SDE	30 March 04

RESOURCES

Area	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	Total
Restoration ($M)	4.8	5.0	6.0	6.0	6.0	5.0	5.0	5.0	42.8
Compliance ($M)	5.3	6.6	7.4	4.4	4.1	3.8	3.8	3.8	39.2
P2 ($M)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6
Conservation ($M)	1.8	1.8	1.5	1.5	1.5	1.5	1.5	1.5	12.9
Forestry ($M)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	2.4

EXIT CRITERIA

AEDC must accomplish all remediation efforts for designated sites by FY07. The remaining tasks, including restoration site monitoring, are recurring in nature.

MAINTAIN SAFETY STANDARDS

OPR

SE

OCR

NA

ACHIEVEMENT STRATEGY

We will posture AEDC for future opportunities through sustained safety compliance. We will achieve this by promoting continuous process improvement and integrating safety considerations as a part of AEDC's decision-making process.

MILESTONES

Milestones for safety will include annual compliance with regulations and reduction of the safety incident rate and lost workday rate. This rate will be five percent each six months as measured against the average rates for the first five periods of the operating contracts.

RESOURCES

Fiscal Year	02	03	04	05	06	07	08	09	Total
Requirement ($M)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	8.0

BASELINE

The baseline for performance measurement will be the FY01 safety incident rate and lost workday rate.

PERFORMANCE MEASURES

The safety key performance measures to be used to assess progress from the baseline are safety incident rate, lost workday rate, and SSHA audit compliance.

EXIT CRITERIA

Throughout the period of this Strategic Plan, the objective will be considered accomplished if safety key performance measures have been attained.

PROVIDE QUALITY BASE SUPPORT SERVICES

OPR

SD

OCR

N/A

LINKAGE

This CSF encompasses a host of basewide services including supply, transportation, and base security and law enforcement activities of all personnel on or passing through the 40,000-acre Base as well as the 600-acre industrial complex designed to safeguard DoD and commercial aircraft and rocket test hardware and data. Security requirements for the $7.1B infrastructure assets include fire protection and disaster preparedness. In addition, military family housing support and morale and quality of life services are included. The efforts directly link to the I&S MET 1.

Key initiatives include the following:

- Significantly reduce inventory items by removing outdated items and implementing a repairable program to reduce repair cycles of complex mechanical and electronic spare parts

ACHIEVEMENT STRATEGY

The support contractor at AEDC provides all of the above functions. Performance expectations and metrics to assess status are reviewed quarterly and assessed formally in the biannual award fee determination.

RESOURCES

This section contains a summary of resources required to accomplish the strategic thrust. The following forecasts resource requirements for FY02-09.

Fiscal Year	02	03	04	05	06	07	08	09	Total
Requirement ($M)	13.6	13.7	13.7	13.7	13.6	13.6	13.6	13.6	109.1

EXIT STRATEGY

These are recurring efforts and have no exit strategy.

ENABLE OUR PEOPLE TO EXCEL (ST5)

OPR

CV

OCR

Work Force Shaping IPT
Transformation, ACS
Training and Development, SvT

LINKAGE

AFMC completed a Work Force Shaping Study, dated 14 April 2000. This study drives AEDC to develop an associated accession plan, which is linked to and will be accomplished under this action plan. All actions in this action plan are considered to be linked, whether performed by government or contractor personnel.

Strategic Thrust 5 directly links to the accomplishment of the AFMC Strategic Plan as follows:

- **T&E Mission Essential Task 2**: "Provide, maintain, and modernize the T&E capabilities, facilities, equipment, and ranges required to meet systems requirements."
- **People Enabling Task**: "Create an environment where individuals and their families feel valued and respected."
  - *Objective 1:* "Implement a program beginning in CY01 to increase the focus on individuals and families to improve the quality of life of the AFMC-serviced work force.''
- **Human Resources Enabling Task**: "Acquire and sustain the human resources required to support the command METs"
  - *Objective 1:* "Develop the command human resources management processes required to provide the quality and quantity of employees to support the command mission by FY02."
  - *Objective 2:* "Use the processes to put in place a work force by FY07 that will achieve the FY09 command objectives."
  - *Objective 3:* "Ensure our civilian and military force obtain the experience, education and training needed to support the command mission by FY04 by developing and implementing programs, policies, and formal career paths designed to encourage career broadening and multiskilling experiences as well as functional and managerial training (e.g. Career Program Education and Training Plans, Developing Acquisition Leaders Program)."

Strategic Thrust 5 must also be linked to other current AFMC initiatives to avoid redundant and wasteful effort:

- AFMC Enabling Task, 20 April 2001: "a command total force that is balanced by age, years of service, gender and diversity."
- AFMC HR Strategic Plan

- AFMC Civilian Personnel Management Improvement Strategy (CPMIS), April 2001.
- AFMC Scientist and Engineer Requirements and Resources Review (June 2001)

Approximately 90 percent of the AEDC work force is in the private sector, working for AEDC's support contractors. The development of our contractor work force is of critical importance to the accomplishment of AEDC's mission, but the management of that work force is not controlled by the government. This action plan therefore is linked to contractor plans for work force development at a level appropriate for contract requirements.

ACHIEVEMENT STRATEGY

The strategy involves the accomplishment of two Critical Success Factors (CSFs). These are Match Skills to Requirements and Maintain a Motivated and Professional Work Force.

MATCH SKILLS TO REQUIREMENTS

Government

Over the past year, AEDC has reviewed its requirements by AFMC Mission Area and developed a list of needs to be met by AEDC's Accession Plan. At the same time, AFMC has pursued the Scientist and Engineer Requirements and Resources Review. Currently, the Work Force Shaping IPT (WFS IPT) is working with AEDC's government employees across all military and civilian categories to:

- Identify key government roles and responsibilities performed by AEDC organizational elements
- Understand the tasks performed to accomplish the above key government roles and responsibilities, and the percentage of employee time spent performing these tasks

Information from this initiative will be used to:

- Complete the AFMC-directed Accession Plan
- Validate current position descriptions and employee assignments
- Identify training shortfalls and employee development needs
- Understand where new workload should go
- Identify functions that consume high levels of work force resources and are candidates for review and/or process improvement efforts

AEDC's support contractors are responsible for meeting government requirements by providing the appropriate number of personnel with the required skills. Examples of current contractor initiatives follow.

ACS

ACS provides the appropriate number of personnel with the required skills by taking the "Whole Person" approach. ACS uses the Lominger Competency Management Methodology to develop plans and ensure required skills are acquired. Training and development is tracked according to the development plan, and any gaps are resolved. New requirements are constantly evaluated to ensure that the required skills are provided.

Primary tools used by ACS are:

- Zenger Miller/Achieve Global leadership training that consists of courses delivered based upon competency development needs
- Harvard Business School Interactive Manager series that consists of case studies from Harvard
- Craft Certification and Cross Training that involves cooling water, steam, and water quality sections of Mechanical Operations
- Computer Training Center that has instructor-led computer training and administers over 1700 CBT programs
- IT Development Program supported by an education alliance partner with the University of Tennessee Space Institute (UTSI) that provides incentive for new employees and current employees to complete a 21-month development program leading to a Master of Science degree in computer science.

Sverdrup Technology, Inc.

Sverdrup's work force development program is a critical segment of the Human Resources system that includes employee recruitment and selection; performance evaluation, recognition, and reward; and staff development. Ongoing training and development initiatives include:

- Implementation of Sverdrup succession and staff development plans
- Identification and provision of employee training needs
- Implementation of PeopleSoft Human Resources Information System
- Development of team-based culture initiatives

MAINTAIN A MOTIVATED AND PROFESSIONAL WORK FORCE

Government

The AEDC Accession Plan emphasizes "Preserving and growing government work force leadership and management capability". To accomplish this for government employees, AEDC will:

- Execute an accession strategy to overcome anticipated demographics issues.
- Exploit DLAMP resources to infuse additional capabilities in business development, business management, integrated logistics support management.
- Establish a practice of internal personnel rotations to broaden work force experience.
- Emphasize DoD wide recruitment when vacancies arise to promote hiring of best-qualified personnel.
- Implement a training program to improve government personnel skills in business management concepts.
- Emphasize technical training and development for Scientists and Engineers in the government work force.
- Develop and implement a strategy to improve employee motivation using results from the Chief of Staff of the Air Force (CSAF) Organizational Climate Survey results and monitoring implementation of recommendations.
- Implement an improved expectations-setting and feedback process for government employees.

- Ensure that all personnel, government and contractor, understand AEDC's business model, and that they have the interpersonal, teamwork, and leadership skills to work effectively.

AEDC's support contractors are responsible for meeting government requirements by providing the appropriate number of personnel with the required skills. Examples of current contractor initiatives follow.

ACS

Strategic Improvement Project Number 4 covers ACS Work Force Revitalization, to develop and retain a high-performance work force with the correct skill mix.

This is accomplished through the ACS Work Force Revitalization plan that includes:

- Understanding the people by looking at the demographics of the work force, reviewing the skills surveys, conducting multiple sessions with the Directors, identifying the gaps of supervisory and craft functional skills, and preparing training plans
- Ensuring the new employee properly begins work by having a comprehensive new employee orientation program, and reviewing the ACS employee value proposition with the new employee
- Using competency-based management as a set of observable performance dimensions, including individual knowledge, skills, attitudes, and behaviors, as well as collective team process, and organizational capabilities that are linked to high performance, and providing the organization with sustainable competitive advantage
- Using succession planning through directors to include incumbent, planning job competencies, and recommended successor and training plans. Leveraging managing partner's corporate resources to provide senior-level leadership training and mentoring programs
- Maintaining a discretionary effort recognition program that: rewards employees for certifications, licenses and degrees that are not required to hold current position, and encourages continuous development of the work force.

Sverdrup Technology, Inc.

Sverdrup maintains a succession plan that identifies critical skills shortfalls and a staff development plan that is used to develop employee potential and encourage self-directed learning and skills development. Ongoing initiatives include:

- Succession planning
- Internal personnel rotations
- Technical skills training; e.g., maintenance training program and CFD training
- Employee recognition and rewards; e.g., extra-miler awards, and *High Mach* articles
- Collaboration with military and civilian personnel to implement a training program to improve AEDC skills in business management concepts
- Use of the Center Human Resource Index to monitor employee motivation

MILESTONES

Table 8 displays the tasks associated with this objective.

Table 8. Enable Our People to Excel Milestone Schedule

Task	OPR or POC	Date
Complete match of government roles and responsibilities to government organizations	WFS IPT	Completed
Complete modified individual streamlined PODs for three-letter government manangers.	WFS IPT	Completed
Based on results of POD development, identify actions to be taken by organizational elements: 1. Identify positions affected by potential retirements in FY02 and FY03. Target initial efforts on those positions. 2. Establish high level government project structure for FY02; provide to EIT and AEDC managers. 3. Validate current Position Descriptions and identify those to be updated; submit updated PDs to Air Force Personnel Center, as needed. 4. Identify potential employees to fill target positions: a. Create development plans for potential employees b. Fund and implement development plans 5. Complete Accession Plan for targeted positions. 6. Identify workload that can be divested if new workload is levied without additional resources. 7. Identify time-consuming processes as candidates for improvement initiatives.	 1. WFS IPT 2. Incumbents 3. Supervisors 4. WFS IPT/ Supervisors 5. WFS IPT 6. WFS IPT 7. WFS IPT	 1. 15 Nov 01 2. 30 Nov 01 3. 31 Dec 01* 4. 31 Dec 01* 5. 31 Dec 01 6. As needed 7. As needed
Create draft plan for business education	A.M. Snyder/Col Christen	30 Nov 01
Implement plan for business education	A.M. Snyder	31 Dec 01
Assess use of Competency Management Model; make recommendation to WFS IPT	C. Robertson	30 Nov 01
Assess use of PeopleSoft HRMS, make recommendation to WFS IPT	Maj Murray	15 Nov 01
Document AEDC Accession Plan at the 3-letter organization level for government personnel	DPC	31 Mar 02
As needed: Update Organization Chart Update Unit Manning Document Update Individual Development Plans	 XPM XPM Supervisors	As needed*
Assess need for FY03 education and training requirements	WFS IPT/EIT/Corporate Board	31 Mar 02

* These milestones depend on AFMC's timely implementation of the MODERN Personnel Data System

RESOURCES

This section contains a summary of resources required to accomplish the strategy over the FYDP. These resources are the key to POM support.

The following table provides the "Enable Our People to Excel" forecast for FY02-09. The table includes only those resources required for Work Force Shaping Initiatives established by HQ AFMC.

- Training development and administration to work force
- Travel support required for active participation in work force development initiatives

- AEDC contractor participation in and support of milestone chart tasks

Table 9. "Enable Our People to Excel" Requirements Forecast ($ in Millions)

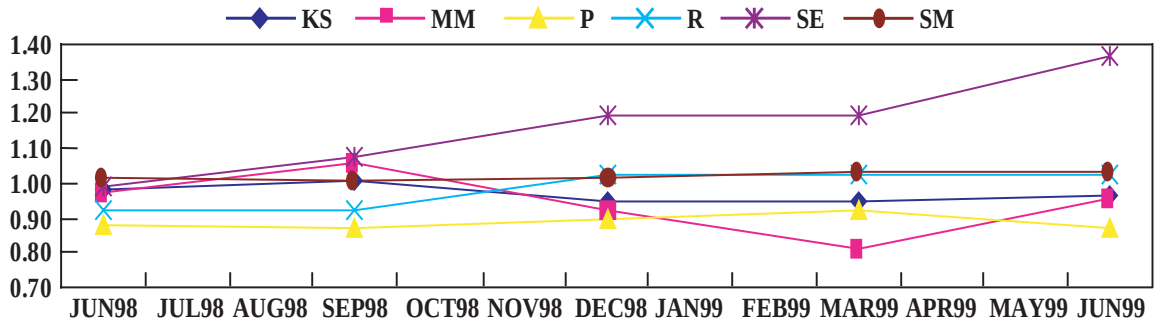
Fiscal Year	02	03	04	05	06	07	08	09	Total
Requirement ($M)	0.29	0.68	0.70	0.72	0.74	0.76	0.76	0.76	5.41

Potential requirements:

- Contractor involvement in work force development initiatives
- Civilian pay changes
- AEDC-wide cost of education and training. Assumes 50 percent increase over the period in government resources.
- Bonuses (civilian incentive pay)
- Recruitment costs (government): travel costs for recruiters, PCS costs for applicants, signing bonuses, etc.

BASELINE

The baseline for this Strategic Thrust is documented in the CSAF Organizational Climate Survey. The survey will be repeated in 2001, given USAF establishment of a new survey date. (The 2001 update scheduled for September 2001 has been postponed indefinitely.)



The Center Human Resources Index (CHRI) is applied to all AEDC personnel, government and contractor. It includes 26 factors, measured and grouped as displayed above.

- KS: Knowledge & Skills
- MM: Motivation & Morale
- P: Principles
- R: Resources
- SE: Supportive Environment
- SM: Superior Manner

Progress against this baseline will be measured every two years.

PERFORMANCE MEASURES

The following performance measures (Key Performance Indicators) define measures to track successful government progress against the Enterprise Work Force baseline. All KPIs that monitor performance of support contractors will be converted to Award Fee metrics.

SCHEDULE PERFORMANCE

- Schedule variance and progress toward completion of objective milestones
- If relevant, completion of milestones for:
  - Submittal of updated Position Descriptions to Air Force Personnel Center
  - Implementation of Competency Management Model for government personnel
  - Update of Organization Chart and UMD

COST PERFORMANCE

No direct savings are linked to this Strategic Thrust, since its accomplishment will require additional resources. Investment in our government work force will increase. Indirect savings will be gained from AEDC's ability to accomplish work more efficiently, and through the accomplishment of other Strategic Thrusts.

OPERATIONAL PERFORMANCE

- Resources are made available for development and administration of business management and technical education
- Accession Plan results in smaller number of vacant billets in critical areas
- Workload is balanced between organizational elements; all core work is accomplished, based on similar POD effort performed sometime during FY03

EXIT CRITERIA

The objective will be considered to have been accomplished when AEDC managers have the information and tools to manage the changing AEDC work force.

SUMMARY

Arnold Engineering Development Center used the guidance from Air Force Materiel Command and the Air Force to develop this 2001 Strategic Plan. The Plan is supportive of relevant AFMC Mission Essential Tasks, Enabling Tasks, and their associated objectives and will be used as guidance for the funding and execution of critical action plans. The Plan also reflects the guidance of our Corporate Board and commander in defining the vital few things AEDC must do to support our mission and that of AFMC and the Air Force.

The commander will chair quarterly management reviews to review the status of these action plans and to take corrective action where warranted.

APPENDIX A
CORE COMPETENCIES
AND CRITICAL FUTURE CAPABILTIES

In the Air Force Strategic Plan, Volume 3, page 8, the Air Force issued this guidance to all units:

> *Critical Future Capabilities* are those capabilities we must maintain, increase, improve, or create to meet the compelling demands of the future security environment. Once realized, these capabilities will fill the gaps in our current capabilities and make the Vision a reality. Each capability discussed plays a role in the decision making process. This process determines what the Air Force plans for and, in turn, how we allocate resources. They are Critical Future Capabilities that, if not aggressively pursued, will result in mission-critical shortfalls in our future force. These shortfalls will occur either in meeting future military demands, given the nature of the mission or forecasted security threats, or in fully realizing potential capabilities, given new concepts and technological opportunities. The capabilities enumerated in the Vision will be the core objectives of Air Force long-range planning, including modernization planning by the MAJCOMS… .

In this reference, the Critical Future Capabilities are organized by Core Competencies. The numbering was added.

CORE COMPETENCIES	CRITICAL FUTURE CAPABILITY STATEMENTS
Aerospace Superiority	1. Rapidly dominate (within days) adversary air forces and air defenses to allow joint and coalition forces freedom from attack, freedom to maneuver, and freedom to attack. 2. Consistent with international agreements, render an adversary's cruise, land attack cruise, and ballistic missile assets ineffective before launch or soon after through timely and effective interaction with national and theater missile defense assets. 3. Protect our space assets and deny, when directed, an adversary's ability to exploit space.
Information Superiority	4. Provide continuous, tailored information within minutes of tasking with sufficient accuracy to engage any target in any battlespace worldwide. 5. In conjunction with joint and national capabilities, ensure our use of the information domain unhindered by all attempts to deny, disrupt, destroy, or corrupt it; and also ensure our ability to attack and affect an adversary's information and information systems in pursuit of military objectives.
Global Attack	6. Create desired effects within hours of tasking, anywhere on the globe, including locations deep within an adversary's territory. 7. Provide deterrence against WMD attack and coercion by maintaining a credible, land-based nuclear and flexible conventional strike force.
Precision Engagement	8. Create precise effects rapidly, with the ability to retarget quickly, against large target sets anywhere, anytime, for as long as required.
Rapid Global Mobility	9. Provide the airlift, aerial refueling, and enroute infrastructure capability to respond within hours of tasking to support peacetime operations or a crisis (up to an MTW) while maintaining the capability to rapidly swing high priority forces to another MTW.
Agile Combat Support	10. Build an aerospace force that enables robust, distributed military operations with time-definite sustainment.

CORE COMPETENCIES SUPPORT AREAS	CRITICAL FUTURE CAPABILITY STATEMENTS
Quality People	11. Build a professional cadre to lead and command expeditionary aerospace and joint forces. 12. Implement innovative concepts to ensure we recruit and retain the right people—active duty, reserve, guard, and civilian forces—to operate our aerospace force in the future.
Innovation	13. Achieve an unrivaled degree of innovation founded on effective integration and testing of new concepts, non-materiel innovations, advanced technologies, and synergistic experimentation.
Command and Control	14. Assess, plan, and direct aerospace operations anywhere from multiple locations in near-real-time, across the spectrum of operations and levels of command.

AEDC will support relevant core competencies and Critical Future Capabilities in its support of AFMC T&E, IM, and I&S Mission Areas. Reference: AFMC Strategic Plan, Appendix A, Table A-1 The numbering in the cells represent the Critical Future Capabilities that are supported.

Table A-1. AFMC Support of Critical Future Capabilities

	Mission Essential Tasks									Enabling Tasks						
	PS	IS	SM	DM	S&T	T&E	IM	I&S	CS	People	ECS	SA	FM	HR	BP	Inf
Aerospace Superiority - Rapidly Dominate	2,3				1						1	1,2				
Aerospace Superiority - Cruise/Ballistic Missiles	2,3				1						1	1,2				
Aerospace Superiority - Space Assets	2,3				1						1	2				
Information Superiority - Provide Information		1,2,3					1									
Information Superiority - Ensure Operations		1,2,3					1									
Global Attack - Desired Effects	2,3		1	1,2	1	1					1					
Global Attack - WMD Deterrence	3		1	1	1											
Precision Engagement - Precise Effects	2,3	1,2,3	1	1,2	1	1					1					
Rapid Global Mobility - Airlift and Refueling	1,2,3		1	1,2		1					1					
Agile Combat Support - Distributed Operations	1,2		1	1,2	1	1					1					
Quality People - Leaders									1,2	1				1,2,3,4		
Quality People - Recruit and Retain										1				1,2,3		
Innovation - New Concepts	1,2				1	1			1			2		3		
Command and Control - Direct Operations		1,2,3					1									

APPENDIX B
ACRONYMS

Acronym	Definition
A&M M&S	Armament & Munitions Modeling & Simulation
AAC	Air Armament Center
A/C	Aircraft
ACS	Support contractor at AEDC
AEDC	Arnold Engineering Development Center
AFMC	Air Force Materiel Command
AFCA	Air Force Communication Agency
AFFTC	Air Force Flight Test Center
AIDACS	Advanced Instrumentation & Data Collection System
AMSC	Advanced Missile Signature Center
AIT	Atmospheric Interceptor Technology
APOM	Amended Program Objectives Memorandum
APTU	Aeropropulsion Test Unit
ASTF	Aeropropulsion Systems Test Facility
BMDO	Ballistic Missile Defense Organization
BP	Business Practices
CAMP	Corrective Action Management Plan
CAPS	Computer Aided Preventive Maintenance Systems
CAS	Cost accounting system
CBT	Computer Based Training
CFD	Computational Fluid Dynamics
CFO	Chief Financial Officer

CHRI	Center Human Resources Index
CITS	Combat Information Transfer System
COTS	Commercial-off-the-shelf
CPMIS	AFMC Civilian Personnel Management Improvement Strategy
CSAF	Chief of Staff of the Air Force
CSF	Critical Success Factor
CSSR	Cost Schedule/Status and Reporting
CTEIP	Central Test & Evaluation Investment Program
CV	Vice Commander
DISN	Defense Information Systems Network
DLAMP	Defense Leadership and Management Program
DO	Operations Directorate
DOI	DO Investments
DOO	DO Test Operations & Maintenance
DPC	Civilian Personnel office
DT&E	Development Test & Evaluation
EIT	Enterprise Integration Team
EO-IR UV	Electro Optics Infrared Ultraviolet
ET	Enabling Task
ETF	Engine Test Facility
FM	Comptroller Directorate
FPST	Free Piston Shock Tunnel
FRSW	Fast Reaction Standoff Weapon
FY	Fiscal Year
FYDP	Future Years Defense Program

GAAP	Generally accepted accounting procedures
Gn_2	Gaseous nitrogen
HPC	High-Performance Computer
HPCMO	High-Performance Computer Modernization Office
HQ	Headquarters
HR	Human Resources
HRMS	Human Resources Management System
I&M	Improvement and Modernization
I&S	Installations & Support
ICI	Infrastructure Condition Index
ID&C	Instrumentation, Data & Controls
IM	Information Management
IMMA	Information Management Mission Area
INF	Infrastructure ET
IP	Internet Protocol
IPT	Integrated Product Team (or Integrated Process Team)
ISAG	Independent Strategic Assessment Group
ISR	Intelligence, surveillance, and reconnaissance
IT	Information technology
JOCAS	Job Order Cost Accounting System
JSF	Joint Strike Fighter
KEW	Kinetic Energy Weapon
KPI	Key Performance Indicator
KS	Knowledge and Skills
LISS+	Life-cycle of Information Software Solutions Plus

M&R	Maintenance & Repair
M&S	Modeling and simulation
MAJCOMs	Major Commands
MET	Mission Essential Task
MILCON	Military Construction program
MM	Motivation and Morale
MRTFB	Major Range and Test Facility Base
MTW	Major Theater War
Mx	Test Maintenance
NASA/MSFC	National Aeronautics and Space Administration/Marshall Space Flight Center
NAWCWPNS	Naval Air Warfare Center Weapons Division
NPDES	National Pollutant Discharge Elimination System
OCR	Office of Collateral Responsibility
OPR	Office of Primary Responsibility
OT&E	Operational Test & Evaluation
P	Principles
PCS	Permanent change of station
PC&S	Propulsion Consolidation & Streamlining
PD	Position description
PK	Contract Division
PdM	Predictive Maintenance
PM	Preventive Maintenance
POD	Process oriented description
POM	Program Objectives Memorandum
PWT	Propulsion Wind Tunnel facility

R	Resources
Range I	Impulse Tunnel
RCRA	Resource Conservation Recovery Act
RDAS	Real-time Display & Analysis System
ROI	Return On Investment
RV	Reentry Vehicle
SA	Strategic Assessment
SD	Support Directorate
SDC	Support Directorate Communications
SDF	Support Directorate Facilities
SDT	Support Directorate Test Support
SE	Safety Office
SE	Supportive Environment
SM	Superior Manner
SSHA	System Safety Hazard Analysis
ST	Strategic Thrust
SvT	Sverdrup Technology, Inc.
T&E	Test & Evaluation
TBD	To Be Determined
TE	Test & Evaluation (used with AFMC Test & Evaluation Mission Area)
THAAD	Theater High Altitude Area Defense
TMDE	Test Measurement Diagnostic Equipment
TOMIP	Test Operation Modernization and Integration Project
TUPM	Test Utility Process Modernization
TVEC	Tennessee Valley Economic Coalition

UMD	Unit Manning Document
UTSI	University of Tennessee Space Institute
VFSS	Variable Frequency Starting System (C-Plant)
VKF	Von Karman Facility
WBS	Work Breakdown Structure
WFS	Work Force Shaping
WIN2K	Windows 2000
WMD	Weapons of Mass Destruction
XP	Plans & Programs Directorate
XPM	Plans & Programs Directorate Manpower & Organization
XPX	Plans & Programs Directorate Strategic Planning