Defense Industrial Base Predictive Analysis System

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What is DIBPAS?

DCMA
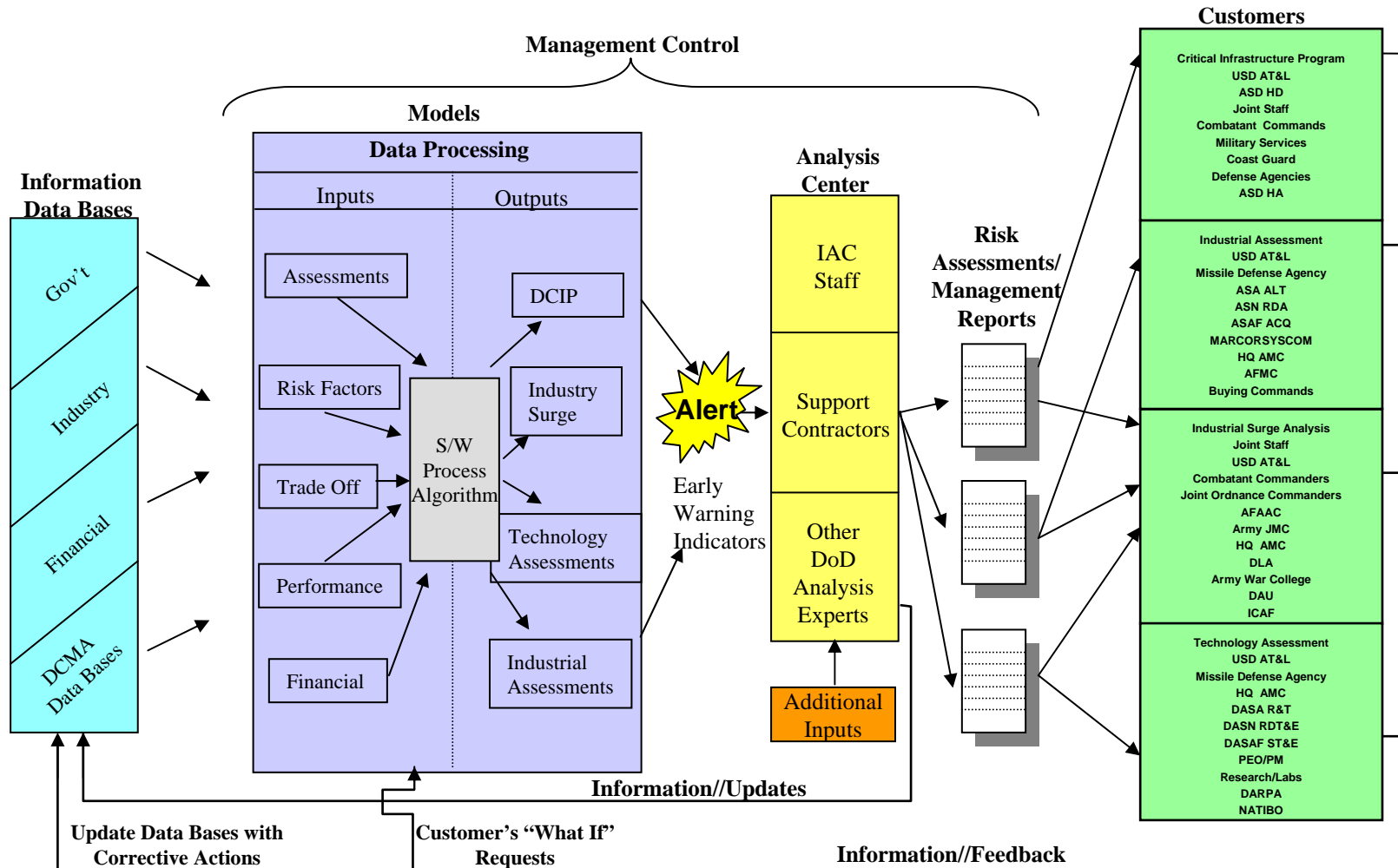Defense Contract Management Agency

- The Defense Industrial Base Predictive Analysis System (DIBPAS) is the foundation of an institutionalized process to provide predictive analysis that enables the user community to avert risk and enhance acquisition, technology and readiness investment and operations decisions relevant to industrial base investment decisions.

- It will be comprised of a series of sophisticated models and interrelated databases, and will be operated through an e-tools application.

- The design of this modeling system will be flexible to export to senior decision makers, major buying activities, combatant commanders, and others throughout DoD for their tailored usage.

- The DIBPAS will be populated with business, economic, industrial, technology, and financial viability information. The Department will then analyze, identify, and predict the extent to which specific critical industrial sites are at risk of failing.

- Indicators will measure economic (capacity utilization, workload), strategic (mergers, acquisitions, buyouts, R&D/Facility investment), financial (profit, stock prices) and operations (strikes, layoffs, contract terminations).

Predictive Analysis System Objectives

- **Electronically collect** sustainable, valid business and economic data on DIB companies and assess them on a regular, recurring basis

- **Identify and forecast risk** for specific critical defense industrial base government and private contractor sites across DoD

- **Enhance early warning** of possible failure at critical defense industrial base assets

- **Provide timely management information** to key senior stakeholders within the Department of Defense, other Federal Agencies, Congress, and the Executive Department

- Support development of **actionable risk mitigation strategies**

- **Monitor / track recommendations** to ensure continuous system improvement

Predictive Analysis System Components

Critical Infrastructure Protection (Mission Assurance Model)
 	
• Extracts data from DoD, non-DoD government, commercial sources, and the media to predict when a company:
   • Will discontinue production of a critical military item
   • Will not be able to deliver satisfy current contract requirements for a critical military
	Technology Assessment
	
	• Extracts data from universities, national laboratories, and the media to determine the technology readiness levels of a set of technologies
	
	• Assesses technology development risks
	
	• Assesses industrial risk
	
	• Assesses programmatic risks

Surge Analysis • Uses many of the same data sets as the CIP model • Evaluates a company's ability to deliver significantly increased quantities of critical military items	**Industrial Capability Analysis** • Uses many of the same data sets as the CIP model • Extracts data from DoD, non-DoD government, commercial sources and the media to assess the ability of an industry sector to support military requirements

Predictive Analysis System

DCMA — Defense Contract Management Agency

Management Control

Models

Information Data Bases
- Gov't
- Industry
- Financial
- DCMA Data Bases

Data Processing

Inputs
- Assessments
- Risk Factors
- Trade Off
- Performance
- Financial

S/W Process Algorithm

Outputs
- DCIP
- Industry Surge
- Technology Assessments
- Industrial Assessments

Alert

Early Warning Indicators

Analysis Center

IAC Staff

Support Contractors

Other DoD Analysis Experts

Additional Inputs

Risk Assessments/ Management Reports

Customers

Critical Infrastructure Program
USD AT&L
ASD HD
Joint Staff
Combatant Commands
Military Services
Coast Guard
Defense Agencies
ASD HA

Industrial Assessment
USD AT&L
Missile Defense Agency
ASA ALT
ASN RDA
ASAF ACQ
MARCORSYSCOM
HQ AMC
AFMC
Buying Commands

Industrial Surge Analysis
Joint Staff
USD AT&L
Combatant Commanders
Joint Ordnance Commanders
AFAAC
Army JMC
HQ AMC
DLA
Army War College
DAU
ICAF

Technology Assessment
USD AT&L
Missile Defense Agency
HQ AMC
DASA R&T
DASN RDT&E
DASAF ST&E
PEO/PM
Research/Labs
DARPA
NATIBO

Information//Updates

Update Data Bases with Corrective Actions

Customer's "What If" Requests

Information//Feedback

Mission Assurance Model

In coordination with ASD (HD) ODUSD (IP), the Defense Security Service, Military Services, and other Defense Agencies, DCMA (IAC) has been tasked with developing an analytical model that incorporates algorithms to predict and determine risk for specific critical DIB assets. This predictive analysis model would enhance early warning of possible failure at critical DIB assets that support warfighting requirements. This broad-based initiative will provide timely management information to senior key stakeholders within the Department of Defense, other Federal Agencies, Congress, and the Executive Department.

Mission Assurance Model

- Allows DCMA IAC to proactively analyze assets, develop Risk Management Plans, and monitor results to mitigate the consequences of industrial failure.

- Designed to predict when a company will discontinue production of a critical military item or will not be able to deliver / satisfy current contract requirements for a critical military mission

- Extracts data from DoD, non-DoD government, commercial sources, and the media - business, economic, industrial, technology, and financial viability information

Defense Industrial Base Challenges

- **Companies impact DoD's ability to support warfighters by:**

  - Discontinuing production

  - Failing to deliver quality products

  - Losing critical or key staff or skills

  - Shifting focus to commercial products

  - Acquiring or divesting product lines

- **DoD usually discovers the situations after the fact**

- **Many strategies to mitigate – but all require an early warning**

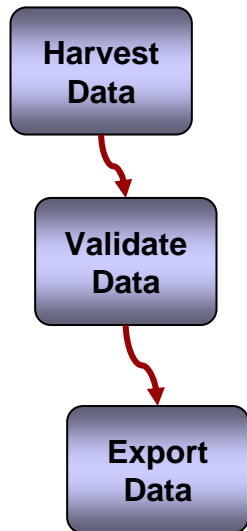> **A predictive model provides the critical early alert for proactive risk mitigation**

Mission Assurance Model Metrics

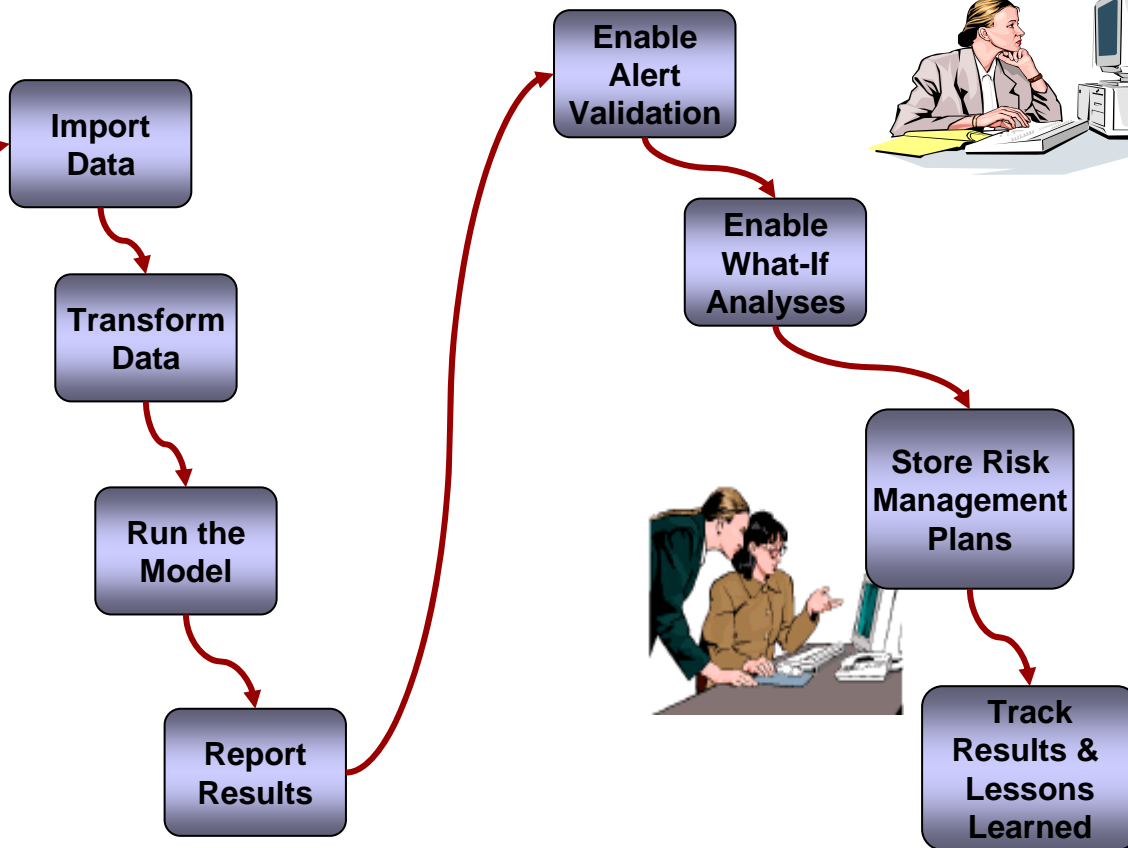| SOURCE	METRICS	USE
Edgar On-Line	Altman Z	Corporate-level Financials
	Current Ratio	
	Debt to Equity Ratio	
	Interest Coverage Ratio	
	Operating Profit	
	Operating Cash Flow	
D&B	Commercial Credit Score Percentile	Site Specific Financial Condition
	Financial Stress Score	
	Paydex Score	
RAMP	Cost rating	Site-Specific Performance
	Schedule rating	
	Performance rating	
Shared Data Warehouse (SDW)	Percent Delinquent – current contract	Site-Specific Delivery Performance
	Percent Delinquent – original contract	
Bureau of Labor Statistics	Prevailing wage	Site-Specific Cost of Doing Business
Economy.com	Energy cost index	Site-Specific Cost of Doing Business
	Cost of doing business index	
Environmental Protection Agency (EPA)	Current Significant Violations	Site-specific information on compliance with company processes and labor-management relations
	Informal Enforcement Actions	
Google News	Accounting practices	Site-specific information on a variety of company performance indicators
	Corporate governance	
	Labor issues	
	Environmental issues	
	Quality	
	Financial performance	
	Production capacity	
	Plant modernization	
	Critical infrastructure failure	
	Natural disasters	

Note: This is a sampling of the metrics for the Mission Assurance Model

System Operation –
Mission Assurance Model
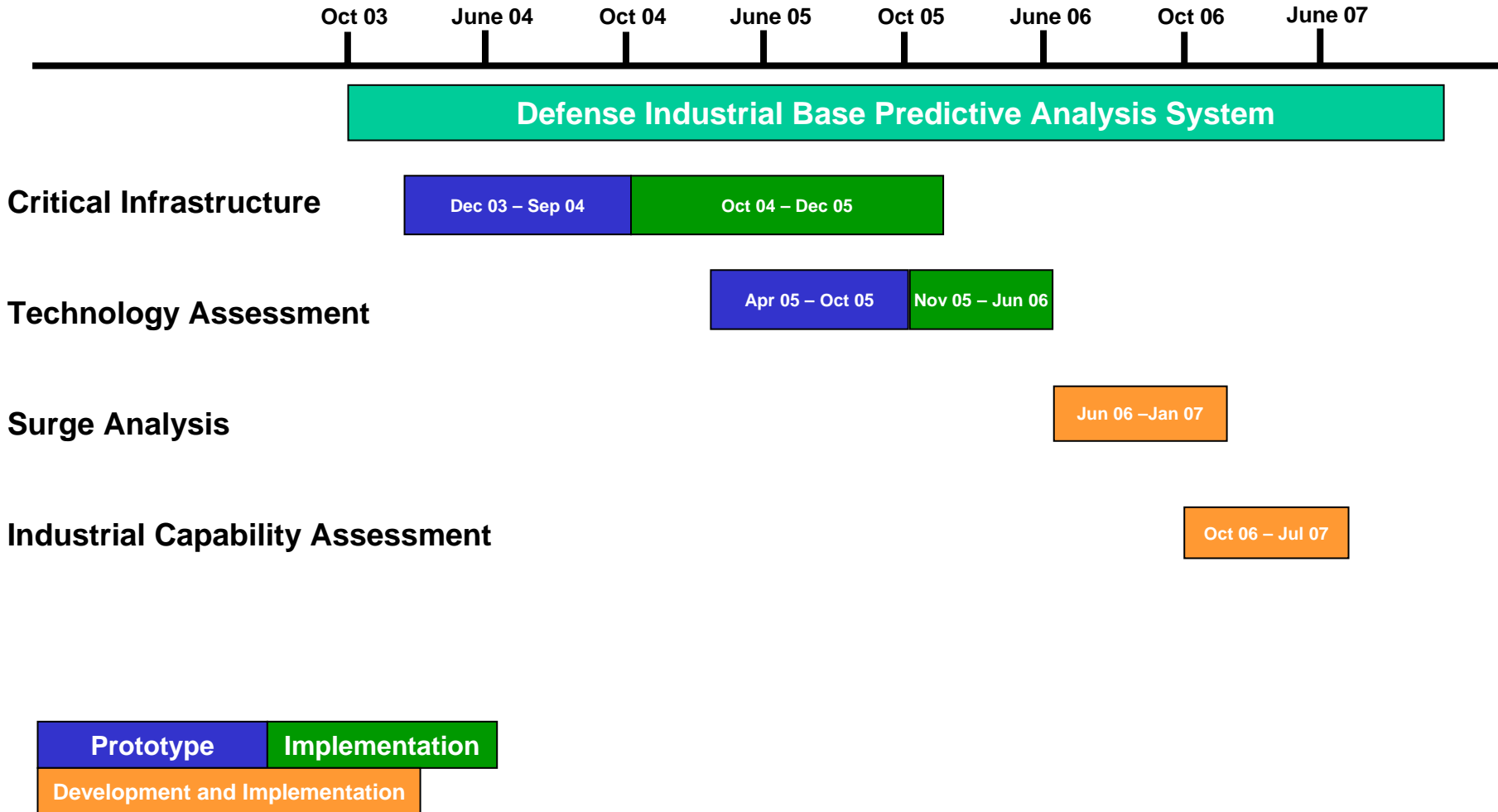
Unclassified Application

Classified Application

```
Harvest
Data
   ↓
Validate
Data
   ↓
Export
Data
```

```
Import
Data
   ↓
Transform
Data
   ↓
Run the
Model
   ↓
Report
Results
```

```
Enable
Alert
Validation
   ↓
Enable
What-If
Analyses
   ↓
Store Risk
Management
Plans
   ↓
Track
Results &
Lessons
Learned
```

Subcontract Management

- What is Subcontract Management
  - Subcontract Management within DCMA addresses subcontracting issues (cost, performance, schedule and sustainment) to ensure effective prime contractor interaction with major and/or critical subcontractors
- How Subcontract Management will be Used
  - Using real time and past performance information, Subcontract Management will provide DCMA a level of confidence demonstrated by the effectiveness of the prime's management of their subcontractors
- What Subcontract Management will do for DCMA
  - Effective Subcontract Management will assist in the determination of the proper level of engagement for DCMA with prime Contractors, Customers and CMOs