


# The Role of CMMI in Mission Assurance

**Raytheon**

*Customer Success Is Our Mission*



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# What is Mission Assurance?

- Mission Assurance

An engineering process performed over the life cycle of a program to identify and mitigate design, production, test and field support deficiencies that could affect mission success.

Includes the disciplined application of system engineering, risk management, quality and management principles to achieve mission success.

Has independent technical assessment as a cornerstone throughout the entire design, development, testing, deployment and operations process.

**Mission assurance is a “cradle-to-grave” process.**

## A Mission Assurance Vision:

Mission Assurance is achieving 100% customer success every time.

Mission Assurance is not a new initiative, and it is not confined to any single program or customer.

Mission Assurance reaches across our enterprise, supply base, business partners and customer base to enable customer success.

**Mission Assurance is everyone's responsibility.**

# A CMMI® Perspective

## Complex Systems/ System-of-Systems



## CMMI Provides Support for Multi-Company Systems

- More disciplined Systems Engineering process
  - Requirements development
  - Integration/test
- Emphasis on measurements for decision making in all processes
- Common vocabulary for describing product development processes
- Increased emphasis on Supply Chain as a critical discipline for success

**CMMI Facilitates Development and Delivery of  
Complex Systems**

# Raytheon's Approach to CMMI

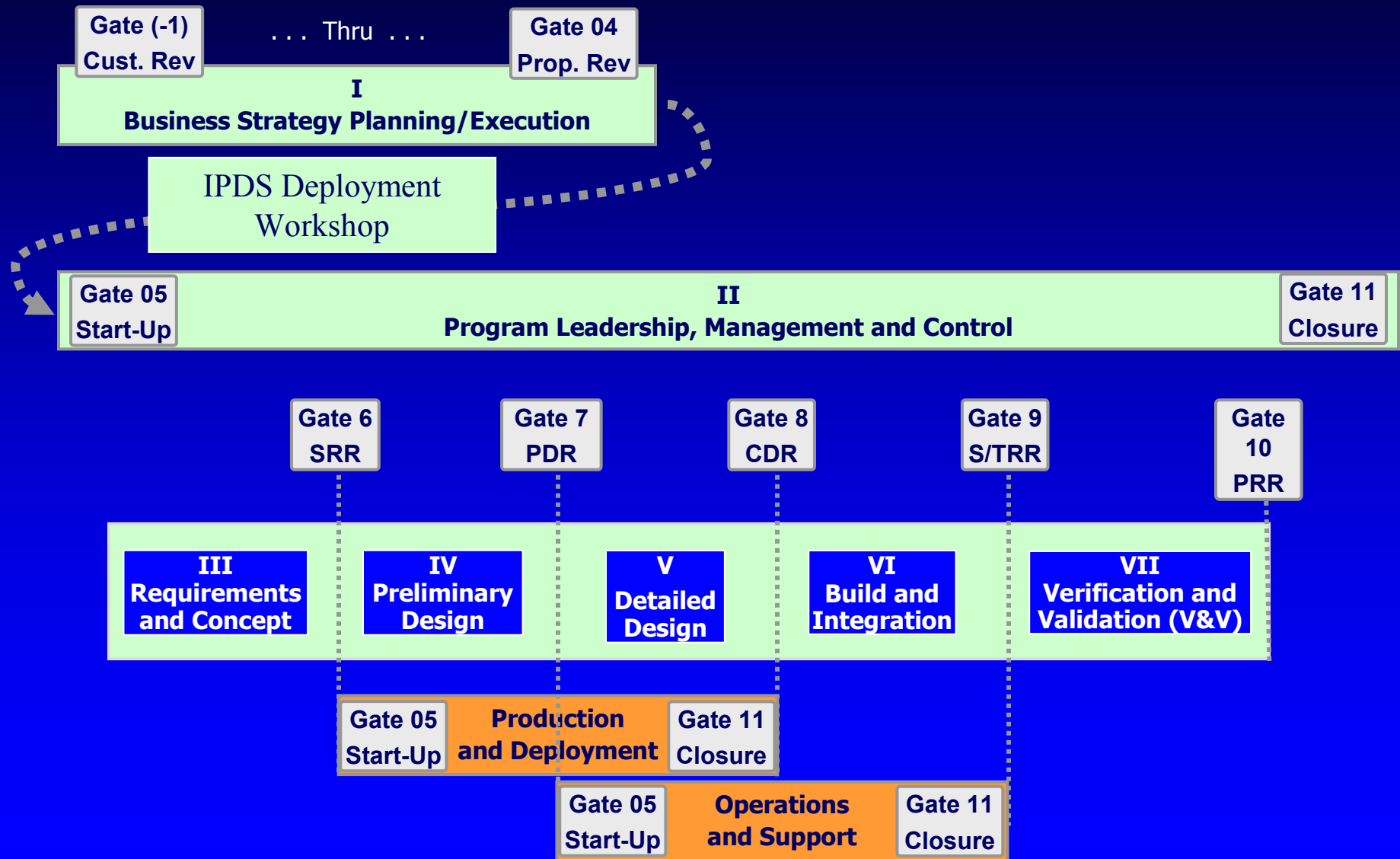
- Company-wide commitment at the top level of leadership
- Ties into other company initiatives:
  - Integrated Product Development System (IPDS)
  - Raytheon Six Sigma (R6 $\sigma$ )
  - Customer Focused Marketing (CFM)
  - 
  - 
  -
- Corporate-wide funding for key training and appraisal
  - Enterprise Steering team
  - Expert Consulting team (Assessment)
- Extended to hardware and other disciplines
- Deployed uniformly to all sites

# Raytheon Six Sigma™

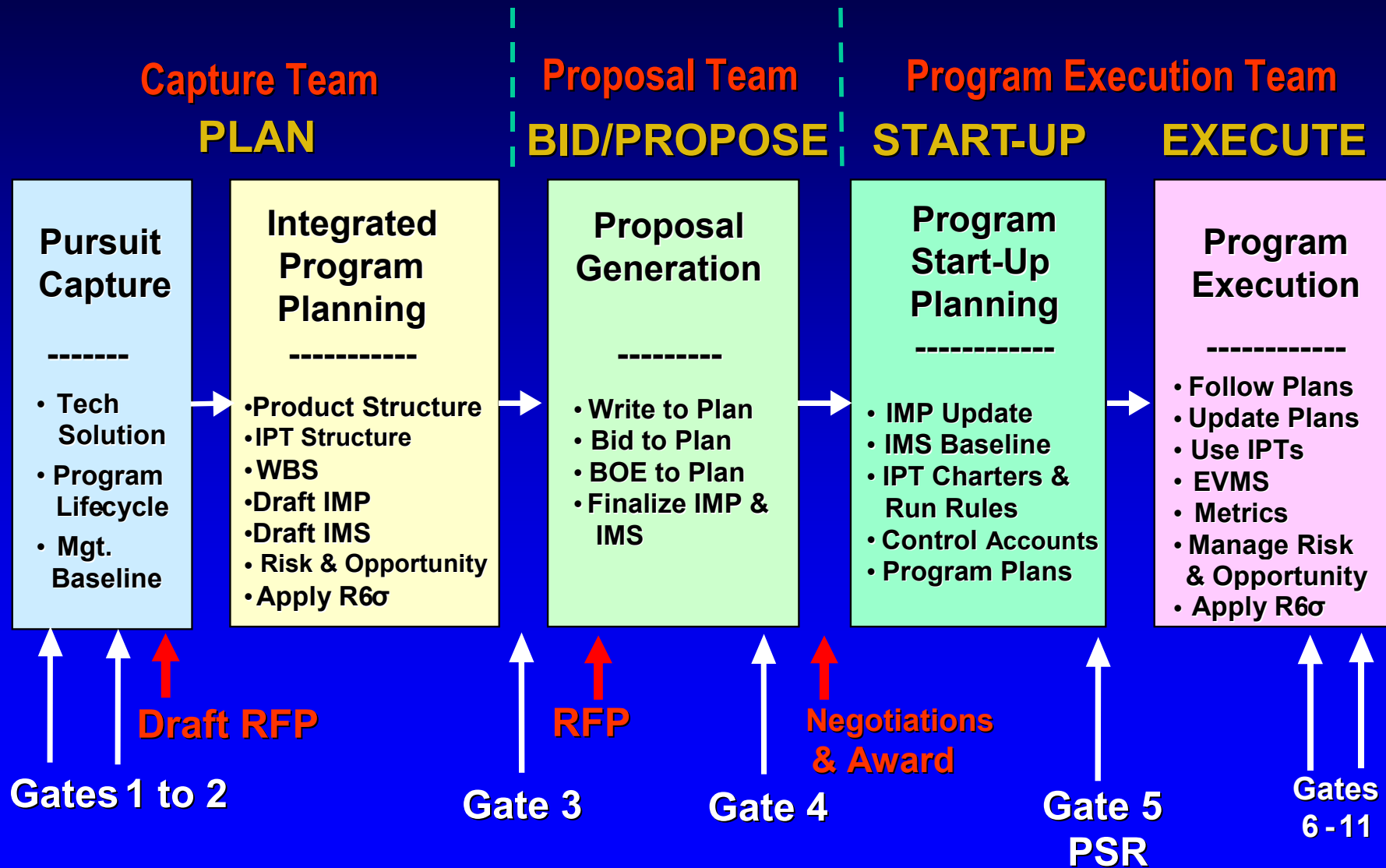


Raytheon Six Sigma is our **knowledge-based process** for transforming our culture to **maximize customer value** and **grow our business.**

# Raytheon Business Processes



# The Deployment of Integrated Program Planning





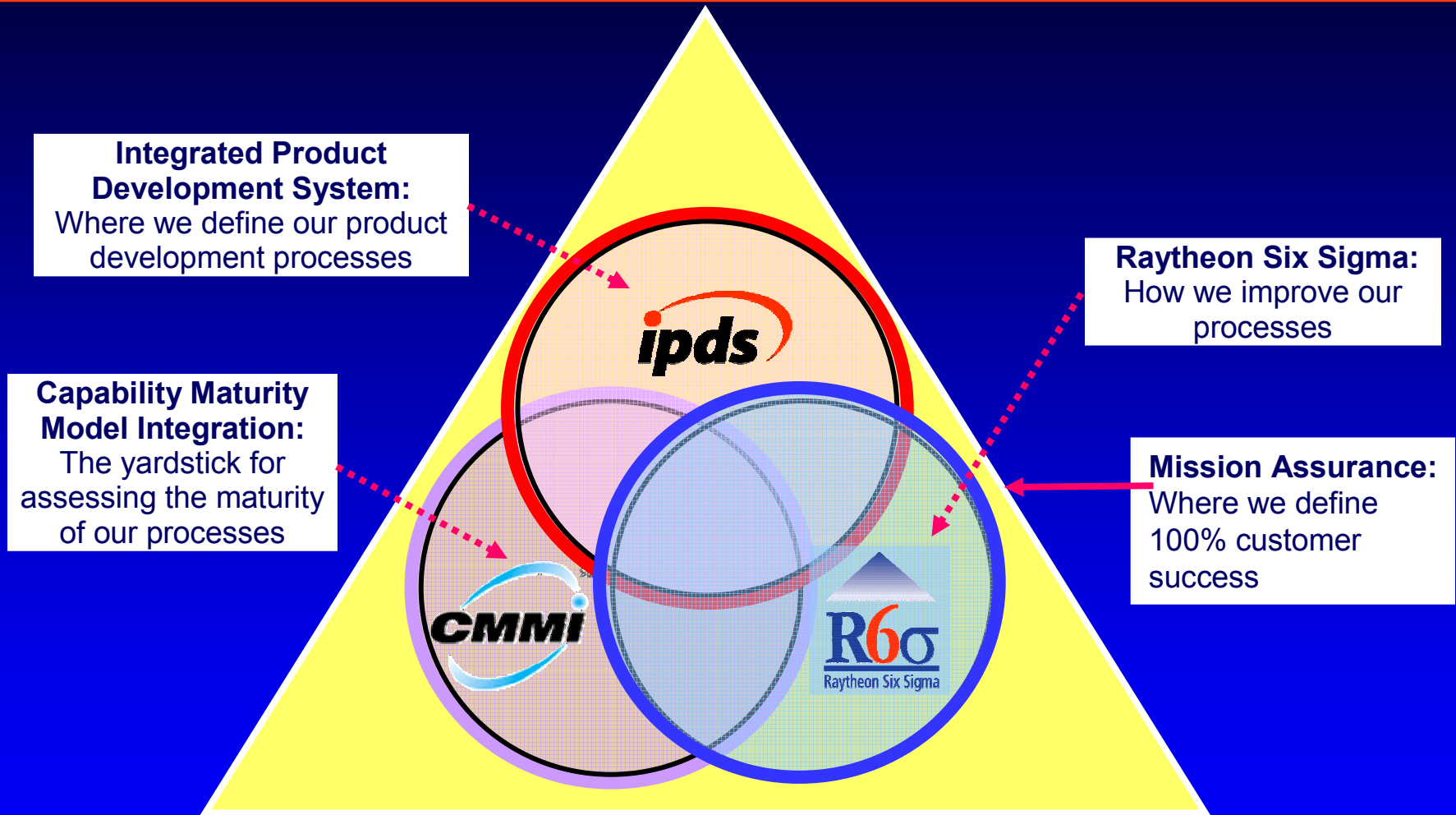
# Measure Effectiveness of Processes

## Example Measures

OPM Score: **790**

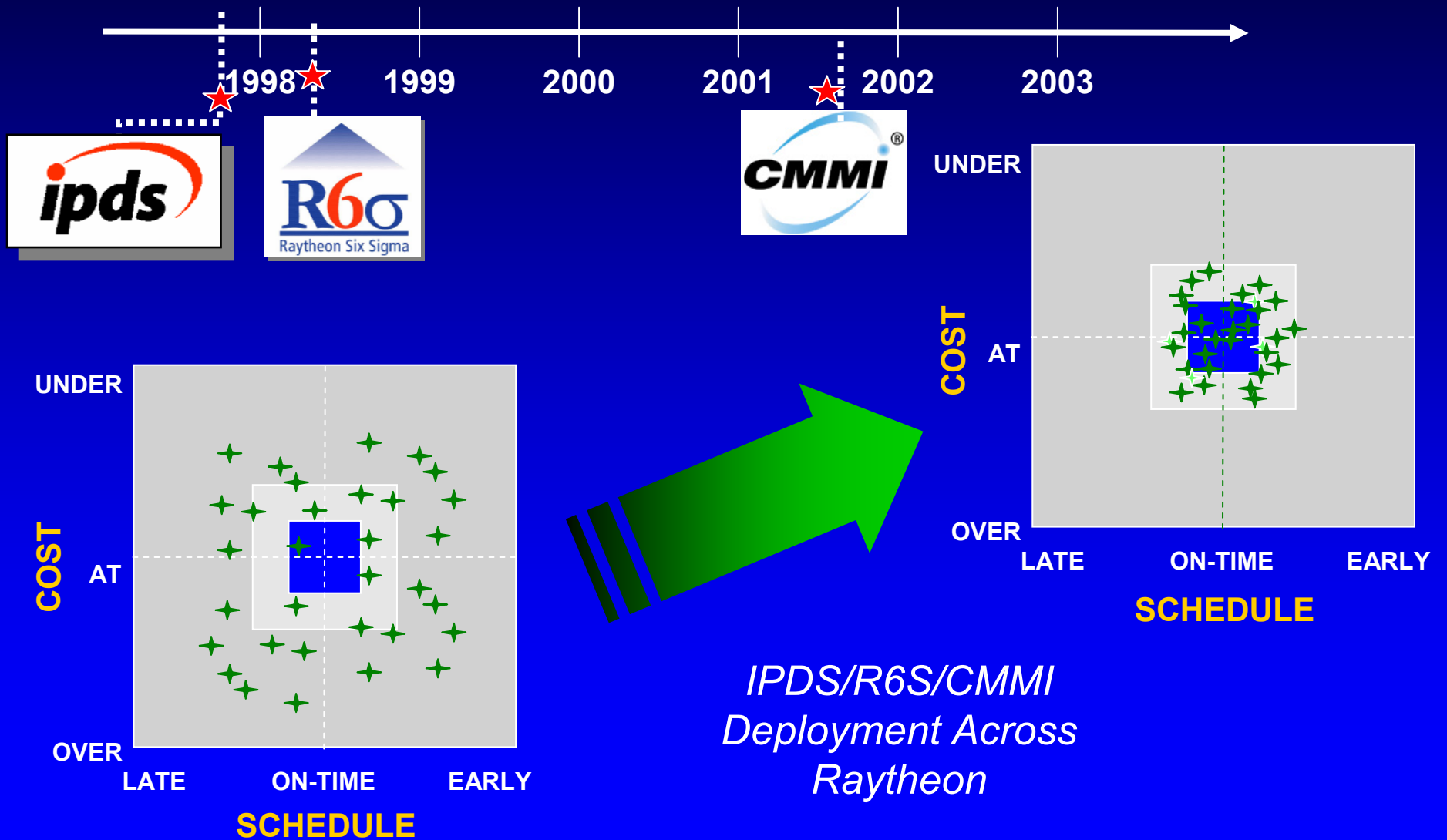
		<i>Planning</i>		<i>Execution</i>	<i>Follow-Up</i>	
		% of Active Programs with Gate Plans	Cumulative % of Delinquent Gates	Cumulative % of Gates with Process Rating of Green (Weighted)	Cumulative % of A/T's Closed on Time	Cumulative Delinquent Actions as a % of A/T Activity
Actuals >		100.0%	0.5%	96.9%	75.1%	4.8%
Stretch Goal >	<b>10</b>	<b>100%</b>	0%	<b>95.3%</b>	82.0%	2.0%
	<b>9</b>	100%	<b>1%</b>	95.2%	80.0%	2.5%
	<b>8</b>	100%	2%	95.1%	78.0%	3.0%
Target Goal >	<b>7</b>	100%	3%	95.0%	76.0%	3.5%
	<b>6</b>	99%	4%	94.9%	<b>74.0%</b>	4.0%
	<b>5</b>	98%	5%	94.8%	72.0%	4.5%
Baseline >	<b>4</b>	97%	6%	94.7%	70.0%	<b>5.0%</b>
	<b>3</b>	96%	7%	94.6%	68.0%	5.5%
	<b>2</b>	95%	8%	94.5%	66.0%	6.0%
	<b>1</b>	94%	9%	94.3%	64.0%	6.5%
	<b>0</b>	93%	10%	94.2%	62.0%	7.0%
<b>Criteria OPM Scores:</b>	<b>10</b>	<b>9</b>	<b>10</b>	<b>6</b>	<b>4</b>	
<b>Criteria Weights:</b>	10	10	40	20	20	
<b>Weighted Criteria Scores:</b>	100	90	400	120	80	
<b>Total OPM Score:</b>				<b>39</b>		
<b>Cumulative Weight:</b>				<b>100</b>		
<b>Total Weighted Score:</b>				<b>790</b>		

# Integrated Architecture Supports Mission Assurance



Start with a common process (IPDS),  
assess the process using CMMI,  
and continually improve the process using Raytheon Six Sigma,  
and you have a good start at Mission Assurance

# IPDS/R6S/CMMI: The Results !



# Summary

- CMMI breadth > Mission Assurance Provisions (MAP)
- MAP has greater depth (prescriptive) than CMMI
- MAP is one example of Mission Assurance.....via MDA
- Your customer must define the essentials of your Mission Assurance “Vision”
- The basic principles of Mission Assurance are not new
- Mission Assurance is dependent on many of the processes and tools developed for use on your programs
- Resource leverage is key to cost effectiveness and sustainability.....build on what you have
- CMMI provides the framework for developing processes to support your Mission Assurance goals