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UK/US SHINGO SUMMIT

2009

HECH MANCHESTER 8-9TH JUNE



# BAE SYSTEMS

Samlesbury Site



# BAE Systems, Samlesbury Site

- Samlesbury is BAE Systems' Military Air Solutions (MAS) primary manufacturing site.
- It has a strong tradition of design, engineering and manufacturing excellence in the aerospace industry.
- The site is home to some of the most advanced aerospace manufacturing and assembly technologies in the world.



# Samlesbury Site

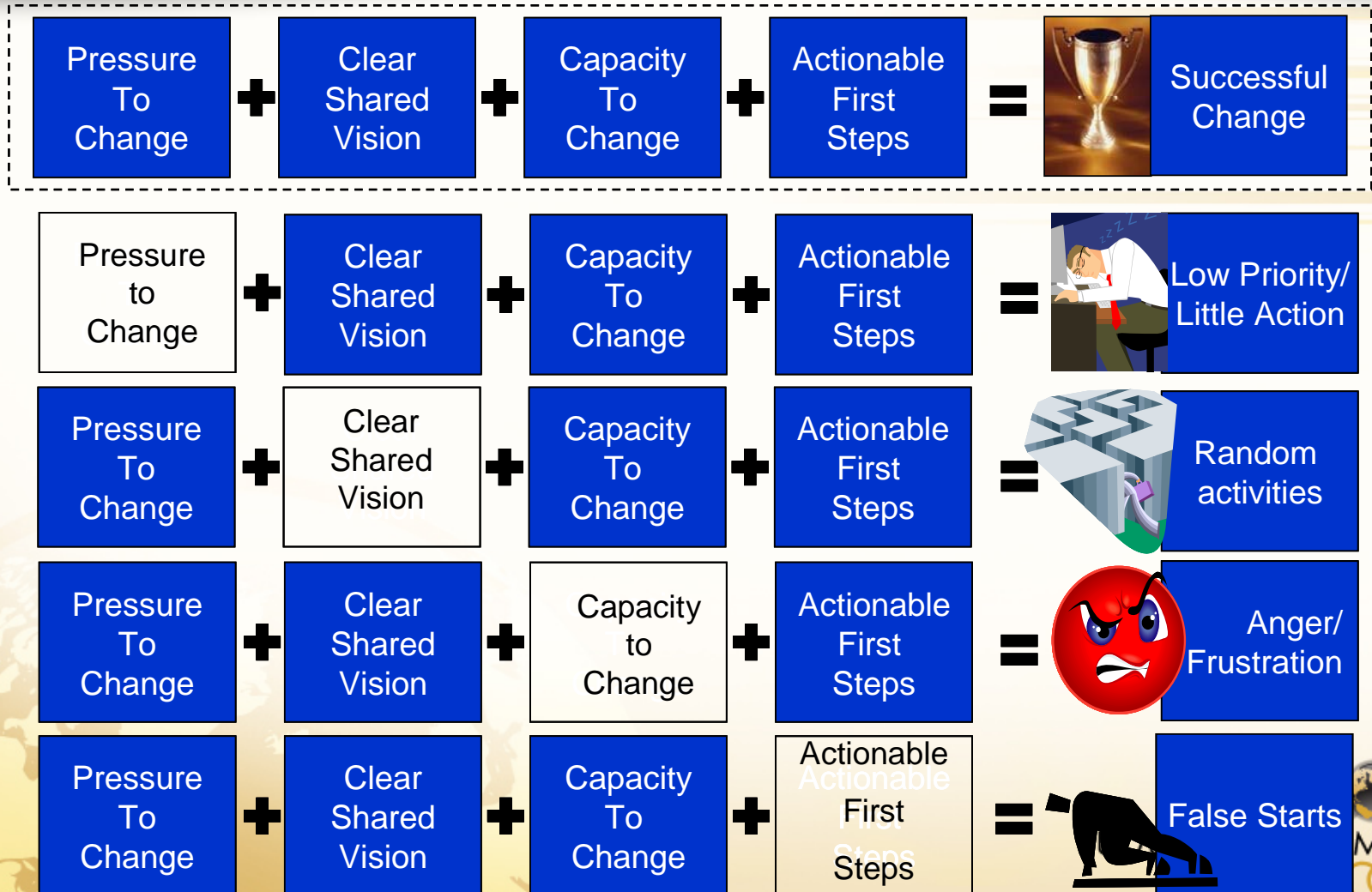
- World Class Airframe Design and Manufacturing Centre
- Principal Projects:
  - Airbus
  - Eurofighter Typhoon
  - F-35 Lightning II



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# Managing Change at Samlesbury



# Pressure to Change



- Significant challenges faced by Military Air Solution at our Samlesbury site, F35 “one a day”, doubling production rate on Typhoon and rate increase in our Airbus facility
- We were a diverse site with Programs and Functions, all with our own way of doing things
- We needed a “Site Direction” where we are all pulling in the same direction
- We also needed to make the link between what we all do every day and our Vision
- Our customers are mandating significant cost reduction



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# Clear Shared Vision



## SAMLESBURY BLUE SKY VISION

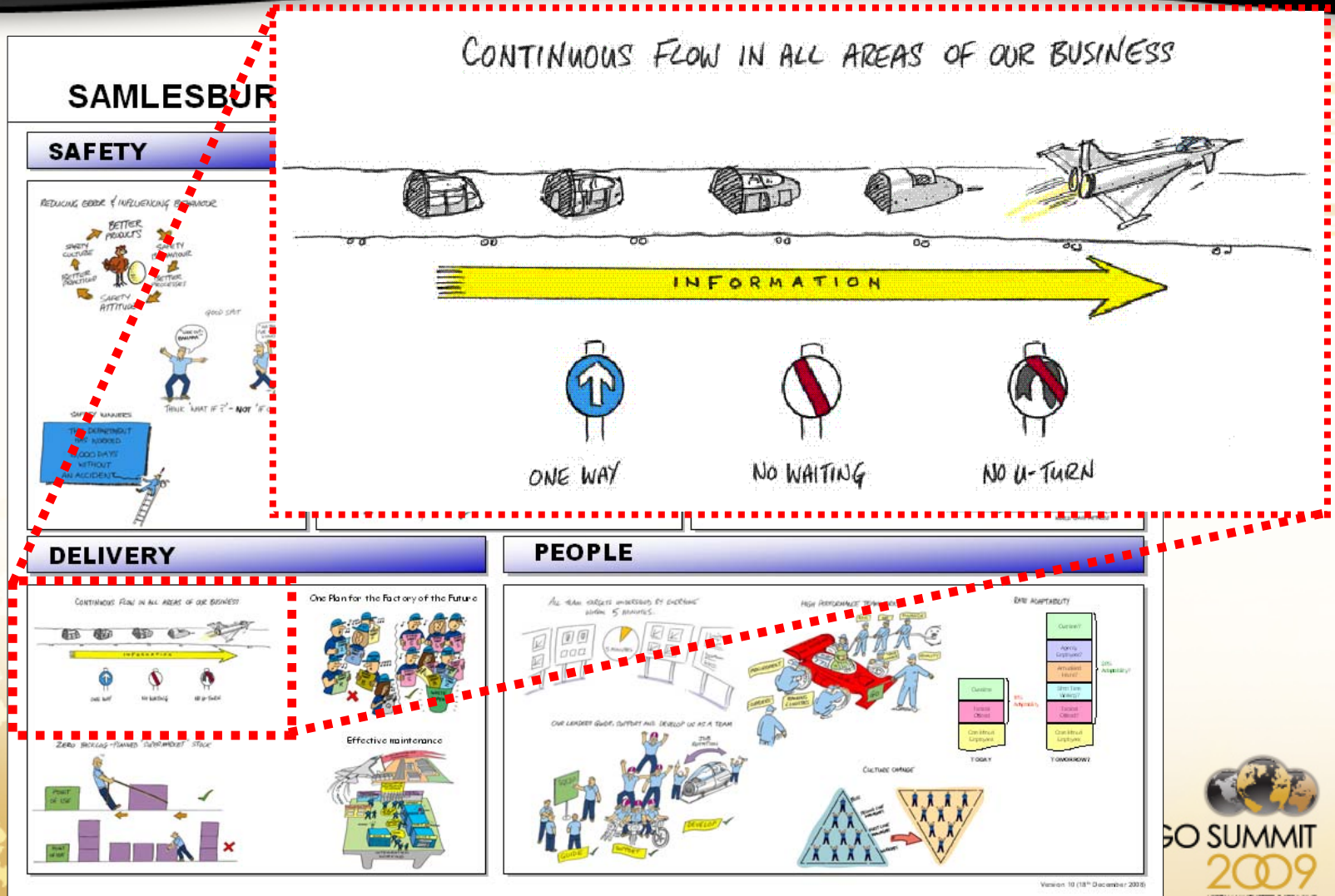


SAFETY	QUALITY	COST
<p><b>REDUCING ERRORS &amp; INFLUENCING BEHAVIOUR</b></p> <p>BETTER PRODUCTS</p> <p>BETTER CULTURE</p> <p>BETTER BEHAVIOUR</p> <p>BETTER PERFORMANCE</p> <p>BETTER PROCESSES</p> <p>SAFETY ATTITUDE</p> <p>GOOD STAFF</p> <p>THINK "WHAT IF?" - NOT "IF ONLY"</p> <p>SAFETY MANAGER: THIS DEPARTMENT HAS AVOIDED 10,000 DAYS WITHOUT AN ACCIDENT.</p>	<p><b>ON TARGET WITH MINIMUM VARIATION</b></p> <p>WE ALL STRIVE FOR QUALITY IMPROVEMENT</p> <p>A QUALITY ISSUE CAN BE SEEN AS AN OPPORTUNITY FOR IMPROVEMENT</p> <p>REACTIVE QUALITY MANAGEMENT IS THE MAIN</p> <p>PROACTIVE QUALITY MANAGEMENT IS THE MAIN</p>	<p><b>"YEAR ON YEAR, WE BRIDGE OUR UNIT COST BY AT LEAST 5% IN THE UK"</b></p> <p>EFFECTIVE MANUFACTURING</p> <p>EFFECTIVE SUPPLY CHAIN</p> <p>EFFECTIVE MANUFACTURING</p>
DELIVERY	PEOPLE	
<p><b>CONTINUOUS FLOW IN ALL AREAS OF OUR BUSINESS</b></p> <p>ONE PLAN FOR THE FACTORY OF THE FUTURE</p> <p>ZERO SKILL-GAP TRAINED "SUPERHERO" STAFF</p> <p>EFFECTIVE MAINTENANCE</p>	<p><b>ALL TEAM MEMBERS COMMITTED TO EXCELLENCE WITHIN 5 MINUTES</b></p> <p>HIGH PERFORMANCE TECHNOLOGY</p> <p>OUR LARGEST GROWTH SUPPORT AND DEVELOP US AS A TEAM</p> <p>CULTURE CHANGE</p> <p>ONE RESPONSIBILITY</p>	

Version 10 (18<sup>th</sup> December 2008)



# Clear Shared Vision



# Clear Shared Vision



CONTINUOUS FLOW IN ALL AREAS OF OUR BUSINESS

### SAMLESBUR

#### SAFETY

REDUCING COSTS & INFLUENCING BEHAVIOUR

#### DELIVERY

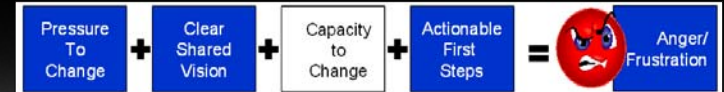
CONTINUOUS FLOW IN ALL AREAS OF OUR BUSINESS

### CULTURE CHANGE

OUR LARGEST GOAL, SUPPORTING US AS A TEAM

Version 10 (18<sup>th</sup> December 2008)

# Capacity to Change



- **The Lean Equation:**

Lean Culture + Lean Facilities = Lean

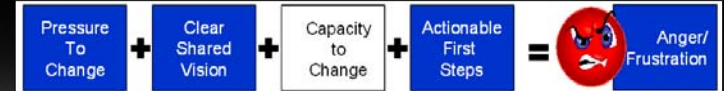
Non Lean Culture + Lean Facilities = Lean

Lean Culture + Non Lean Facilities = Lean

Non Lean Culture + Non Lean Facilities = Lean

- **Common Denominator = Lean Culture!!!**

# Capacity to Change



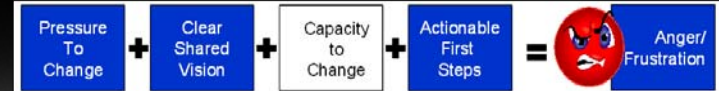
- **Lean Learning Academy** established in Sept 2005
- 3 week Leadership Development Programme

- Teams assigned to business 'Focus Areas'
- 29 Cohorts = +500 Leaders
- Employee, Supplier & Customer Participation

Lean Learning Academy Schedule - Samesbury

Week	Day	Topic	Activities	Feedback	Notes
WEEK 1	1	Value Stream Mapping	Value Stream Mapping	Value Stream Mapping	Value Stream Mapping
	2	Lean Principles	Lean Principles	Lean Principles	Lean Principles
	3	5S Visual Management	5S Visual Management	5S Visual Management	5S Visual Management
	4	Standard Operations	Standard Operations	Standard Operations	Standard Operations
WEEK 2	1	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis
	2	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis
	3	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis
	4	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis
WEEK 3	1	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis
	2	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis
	3	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis
	4	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis	Value Stream Analysis

# Capacity to Change



## Military Air Solution Lean Learning Academy

Phil Astley/Stephen Manley 8/6/2009

### I) Aim of Paper

- Give brief overview / understanding of MAS Lean Learning Academy (LLA)
- Share current status
- Outline next steps

### II) What is the Lean Learning Academy

- Three week intensive MAS Operating System Programme
- Aimed at Leadership and transformational behaviours
- Bedrock for transformation
- Delivers practical application of Lean Tools and Techniques
- Focus on **Leadership Behaviour** and Operating System Principles
- Consistent message throughout the course "**the only thing you can guarantee to change is yourself**"
- It is Leadership's responsibility to change what they can and influence what they can't







### III) Purpose of Lean Learning Academy

- Develop participants knowledge of Operating System
- Develop appropriate behaviours and skills of leadership that enables participants to manage, sustain and continually gain improvements from Operating System
- Develop the philosophy and mindset required for efficient volume production, I.E "One per day JSF" and Rate Readiness Typhoon

### IV) Current Status

- 14 People attended LLA at Airbus Broughton
- 2 Pilot courses delivered at Samlesbury 2005
- 6 Courses in 2006
- 8 Courses delivered in 2007 incl Nimrod
- 9 Courses delivered in 2008 (incl RAF & JSF)
- 2009 plan ⇒ 4 x Samlesbury LLA's, 4 x RAF, 1 x JSF

### V) Programme Content

Leadership	Your role in achieving results through Leadership of Operating System Tools and Techniques & Behaviours	
Plank Game		Practical Paradigm shift 1 minute to under 2 seconds
Wastes		Focus mind on waste Identification
Process Confirmation		Continually Confirm "we do what we say we do"
Value State Mapping		Go, Look, See, Understand what really happens, create Future State and Plan to deliver
Policy Deployment		Effectively deploy Blue Sky Vision and relate to Business results
Lean Tools		Enabler to understand abnormal condition and ability to continually improve



### VI) Benefits

- Lean Leadership capability delivered to critical mass of Samlesbury Leadership at all levels >95%
- Ability to talk, walk, implement and operate in a common business improvement structure
- Cohort-club – re-focus on personal & business delivery
- 50+ Future State Maps with improvements identified
- Embedded into customer business improvement strategy (Top 10 Parts by value)
- SQCDP benefit financially underwritten at £17 Million

### VII) Next steps

- Ensure capability delivered to Leadership encourages participation at the Value-Add level
- Greater focus on Business results & New strategy for Production System Design

# Actionable First Steps



## Lean Learning Academy

Zero

40

200+

300+

500+

LLA = 84

PPS = 400

SLII = 300

## Leadership Skills and Capability Development

2004

2005

2006

2007

2008

2009

BSV

Model Line

Model Line delivers

Top 10 Parts by Value

System Transparency And Local Ownership

Working Practice Change

SQCDP Focus

LLA

LLA & Cohort Club

Other Sites & Eng LLA's

Externally Benchmarked

Safety Exemplar

1<sup>st</sup> Level Policy Deployment

2<sup>nd</sup> Level Policy Deployment Pilot

2<sup>nd</sup> Level Policy Deployment

3<sup>rd</sup> Level Policy Deployment

Quality Exemplar

Process Confirmation

10 BSV Enablers

Rate Readiness

£19m audited Benefits.

Leadership Behavioural Change

Service Excellence

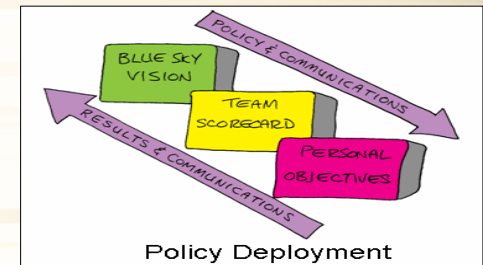
6 Elements



# Policy Deployment

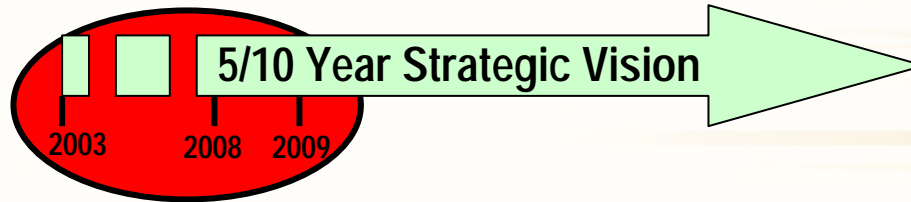
- **Samlesbury Site**

- Policy deployment of our Site Blue Sky Vision and Site Scorecard
- Policy deployment is a process to convert our Blue Sky vision through to individual responsibility
- Policy deployment creates a catalyst for innovate solutions at all levels of the organisation
- This tool enables us all to understand that **“my contribution counts”**

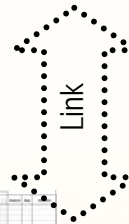


# Policy Deployment

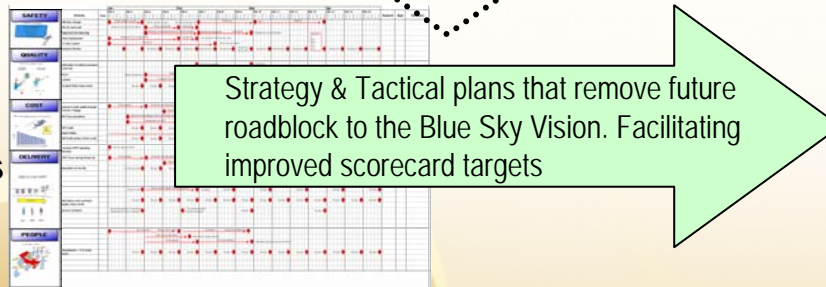
## Blue Sky Vision



## Scorecard & Master Schedule



## Blue Sky Vision Enablers / Elements



# Policy Deployment - Samlesbury

Samlesbury Site Scorecard 2008

	YTD Actual	YTD Target	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	YTD
Production	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Quality	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95
Cost	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Delivery	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
People	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80

Legend: Green = On Target, Yellow = At Risk, Red = Off Target



02/24/2005

# Policy Deployment – The Benefits

- Customer confidence improving in our ability to “show value”
  - Recent investors visit directly referenced our policy deployment process during feedback
  - *“Our BAE teammates on the F-35 program have seen significant improvement in their assembly cost performance, the overall operating system of SQCDP can be directly attributed to their success. I am now driving all of the JSF assembly areas to adopt the BAE operating system framework.”* Bob Fiorentini EVP Production Operation F35
  - We completed no preparation for our recent external safety audit and feedback included *“Deployment of SHE via the “Lean SQCDP” process very impressive, seen as a company benchmark”*
- **Safety:** 45% Reduction in accidents
- **Quality:** 30% Improvement in scrap and concessions
- **Cost:** 14% Reduction in non labour costs
- **Delivery:** 19% Productivity improvements
- **People:** 22% Improvement in EOS

**= To £17M savings since 2004**



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# Reflections: Competing for the Shingo Prize

- The Achievement Report
  - Split the task!
  - ‘Go, look, see’ for evidence
- The Shingo Examiner Team Visit
  - If you thought you already had fresh–eyes on your business.... think again!
  - The simple questions still make you think the hardest
- The prize is not the goal – it’s simply a milestone on the PDCA cycle through our transformational journey





# BAE SYSTEMS

## Thank You!!!

Are there any Questions?

