



Space Missile Defense Symposium

Smart Factory Operating System (SFOS)TM

A real-time operational visibility platform

CREANTM
Accelerating Performance

CREAN's aerospace experience, proprietary technologies, and advanced methodologies **aid the development of our clients' innovative products and accelerate complex production.**



CREANTM
Accelerating Performance

**Innovation
Partner**

Engineering

Production

Suppliers

**Accelerating
Idea to
Delivery**

Experienced Expert Aerospace Engineers

- Systems Engineering Integration & Test (SEIT)
- Mechanical Design, Analysis & Test (MDAT)
- Launch, Missiles, & Propulsion Systems (LMP)
- Electrical Design, Analysis & Test (EDAT)
- Antenna, Arrays, & Optical (AAO)
- Specialty Engineering & Support Services
- Manufacturing Engineering & Methods (MEM)

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Supporting Innovative US Aerospace Companies

Hands-On Aerospace
Engineering Services

600+ Highly Experienced
Subject Matter Experts
on Contract

Trusted Partner of
Suppliers & Integrators

Accelerating Idea to Delivery

**NORTHROP
GRUMMAN**

APL JOHN'S HOPKINS
APPLIED PHYSICS LABORATORY

HRL LABORATORIES

**TRIDENT
RESEARCH**

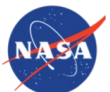
BOEING

Raytheon

SNC SIERRA
NEVADA
CORPORATION

Globalstar

FLIGHT MICROWAVE
Passive Microwave RF Component Design



**GENERAL
DYNAMICS**

JPL



AST
SpaceMobile

NSI MI

**INTUITIVE
MACHINES**



Advanced Methods for Complex Production

- Smart Factory Operation System (SFOS)[™]
- Facility and/or Production Line Design & Layout
- Predictable On-Time Delivery
- Smart Factory Transformation Roadmap
- CREAN Optimization Methodology Training
- Asset Tracking and Contact Tracing Solutions
- Cyber Security; Preventative Measures

CREAN[™]
Accelerating Performance

Smart Factory Solutions for US Manufacturers

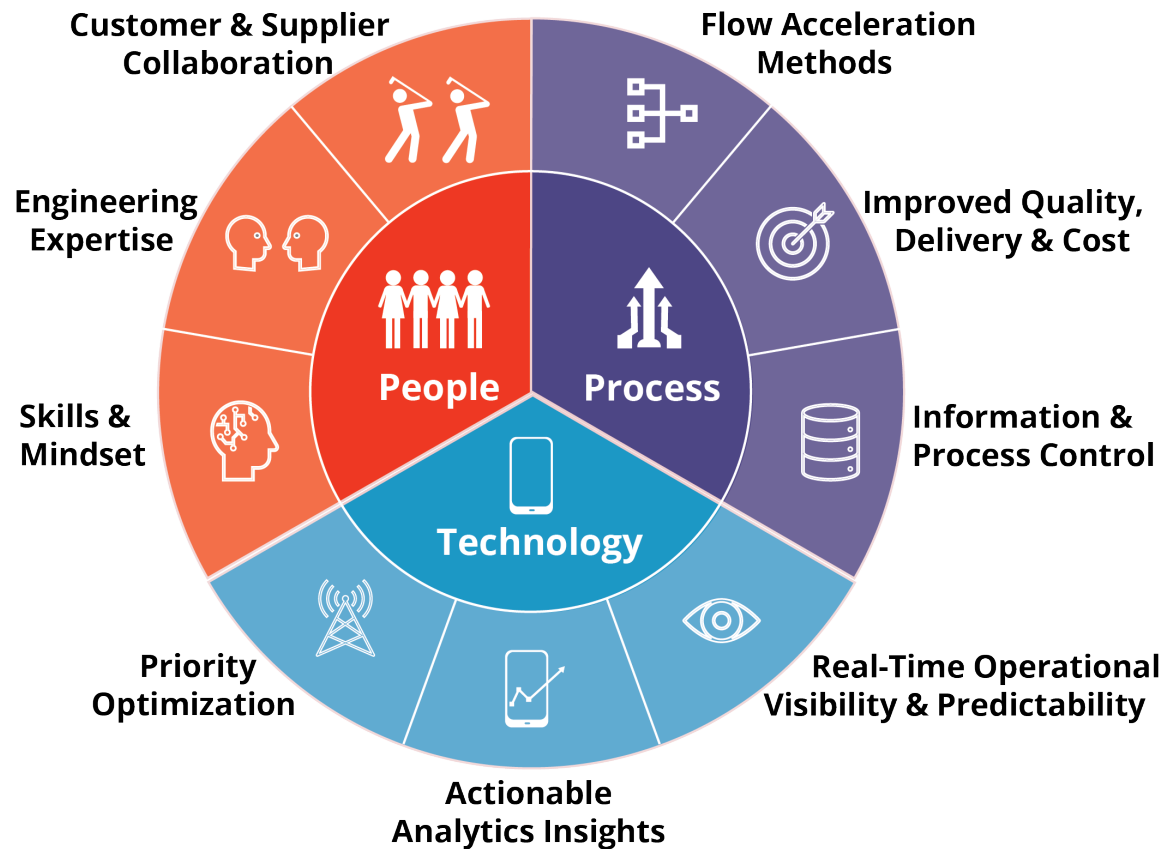
Assured Global Competitiveness

Accelerated Productivity Tool Kit

More than Lean - CREAN

Accelerating Idea to Delivery





Acceleration Tool Kit

Integrating What Matters

People
Process
Technology

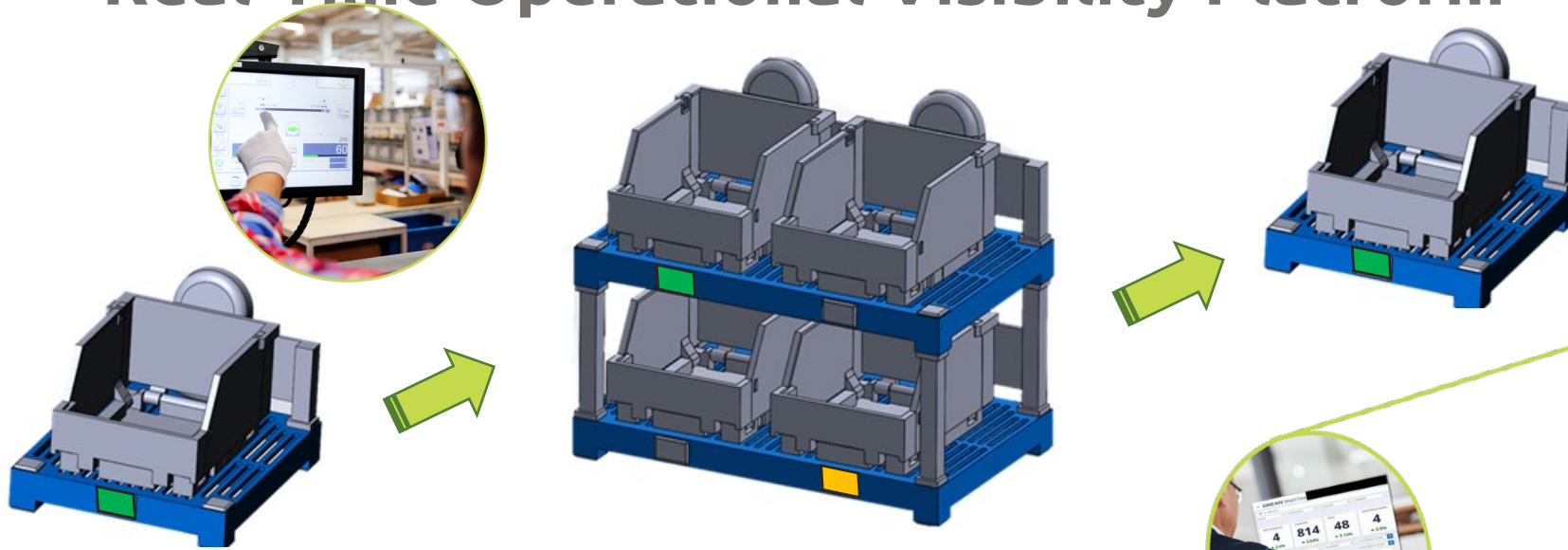
Complexity SimplifiedTM

Accelerating Idea to Delivery

Smart Factory Operating System™ (SFOS) Real-Time Operational Visibility Platform

CREAN™
Accelerating Performance

SFOS™



Smart Bench

WIP Location Visibility
Process Duration
Flow Validation
Work Instructions &
Operator Certs

Smart Rack

WIP Location Visibility
Real-Time Priority
Optimization
Wait Times

Smart Factory OS™

Real-Time Operational Visibility
Notifications to Phone or Computer
AI-Advisor Optimization Insights



**Accelerating
Idea to
Delivery**

Smart Factory Operating System™ Benefits to SMDC customers and their suppliers

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SFOS™

- **Visibility & Insights**

- Where every product is in the production / test / shipping process
- Real-time analytics insights to proactively eliminate shifting constraints

- **Predictability & Process Control**

- Real-Time process, scheduling & prioritization for predictable deliveries
- Process Monitoring, Control Alerts, & Notifications

- **Active Priority Optimization**

- AI-Advisor provides real-time notifications of optimization opportunities
- Simple reprioritization for DPAS rated programs across the factory

- **Acceleration**

- Faster deliveries, quality yield improvements, higher production rates & resource productivity
- Lower costs & higher profits

Predictability in
Complex Production

Simplified Insights

Optimized

**Accelerating
Idea to
Delivery**

Benefits to DoD: Navy Missile Sub-Tier Supplier Rate Acceleration

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Client Profile

Large System Integrator & major supplier to DoD with broad reaching supply chain. Not meeting DoD production rates. Contract delivery performance improvement needed to win upcoming new business.

Situation

Missile deliveries not achieving rate due to sub-Tier supplier quality, late deliveries and inability to achieve rate

Results

- Optimization analysis & implementation
- Rate doubled with minor investment
- Testing processes improved
- New process management system
- Early quality screening for rapid identification & resolution

Bottom Line

- Supplier removed from problem supplier list with no more delivery issues
- Supplier producing at rate, capability to support 3-4 contract rate increases
- Quality delivery issues resolved

**Overcoming
Quality &
Capacity
Issues**

6 Weeks Supplier
Engagement

Rapid Resolution

**Accelerating
Idea to
Delivery**

Benefits to DoD: Critical Small Suppliers Strengthened Financially & Capabilities

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Client Profile

American space payload communication transmission products supplier. 95% of production was custom products. High product demand because of their ability to meet most difficult requirements.

Situation

Consistently late due to demand outstripping capacity. 100 person staff had been working 60-hour weeks for 2 years running.

Results

- CREAN High-Mix Production Factory Operating System integrated to optimize priorities.
- Production rate increased from 18/day to 40/day
- Overtime eliminated for all but 2 workers
- Order to Delivery Lead Time Reduced from 22 weeks to 7 weeks. Increased On-Time Delivery to 98%.
- 90% reduction in Labor Cost per Unit (With No Automation). Carbon footprint slashed.
- Parents enjoy kids' soccer game – first time in 2 years

Bottom Line

- 10X Productivity Improvement. Massive profit improvement. Competitive advantage solidified.
- Company acquired, CREAN system removed & replaced with ERP & standard Lean, performance plummeted, division closed within 18 months.
- Prior owner started new company, hired CREAN!

**10x
Productivity
Gain for
Aerospace
Company**

High-Mix
Aerospace
Production

From late to
Always on Time

**Accelerating
Idea to
Delivery**

Crean Inc.

(Crean & Associates; Crean Innovations)

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EDWOSB

DUNS: 61-398-4975

Cage Code: 4CTY2

NAICS Codes:

541330, 541360, 541370, 541519, 541512, 541611, 541614
541618, 541690, 541715, 541990, 611430, 927110

**CMMC level 3 certified by 2022, ITAR Registered
Cleared personnel available: TS/SCI, DoD Secret**

Government Contract Mechanisms / Past Performance: **CPSS,
MAISES Subcontractor Outstanding service on all measures 5 out of 5**

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**Capability
Summary**

Engineering

Production

Suppliers

**Accelerating
Idea to Delivery**

**The Most Forward-Thinking Organizations in the World Choose CREAN
From Startup to Large Systems Integrations, We Help Accelerate Performance**



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Contact Us

Committed to Your Success

Ready to Accelerate?

Accelerating Idea to Delivery