

# **The Magic is On the Ground**

**“Revolutionizing Global Reconnaissance  
...from the Ground up!”**

**Edward “Ted” Cope**

**Deputy, Chief Information Officer  
National Reconnaissance Office**



# **NRO CIO...**

## **Danger is our Business!**

- **Information Assurance Risk Manager for DNRO**
- **IT Investment Risk Manager for DNRO**
  - ◆ **Enterprise IT accounting, capital planning, performance monitoring**
  - ◆ **Business Case / TCO execution--emerging IT assessments**
- **Catalyst for Transformative Business Practices**
- **Lead NRO Transformation into 21st Century Net-Ready Organization**
- **Failure to strategically leverage IT & Comm revolution....**  
**.... is biggest risk to NRO's future value!**



# Mr Teets' Priorities for NRO

- Get major acquisitions "on track"
- Press with "Black & Blue" integration processes
- Develop world class "Space" workforce
- Provide "assured access" to outer space
  
- Bottom line: "Universal Situation Awareness" (USA)
  
- What's Missing? Linkage to NRO Data & Customers!
  
- Top NRO priority--Provide our customers "assured access" to INFO space!



# 21<sup>st</sup> Century Reconnaissance: More than Spaceships it's "Exploration to Gather Information"

## "Making Sensors"

**ATOMS**  
**\$\$\$Billions**

**Stability**  
**Requirements**

**Vacuum**  
**Rocket Science**

ACQ

**DATA "Sense" NET**  
**NRO Info-structure**

**Data**  
**+**  
**User Context**  
**=**  
**INFORMATION**

OPS

## "Making Info-Sense"

**\$Millions Ecosystem**

**Adaptability**  
**Emergent**

**BITS**  
**Chaos Theory**  
**Cognitive Sci + Poly Sci**

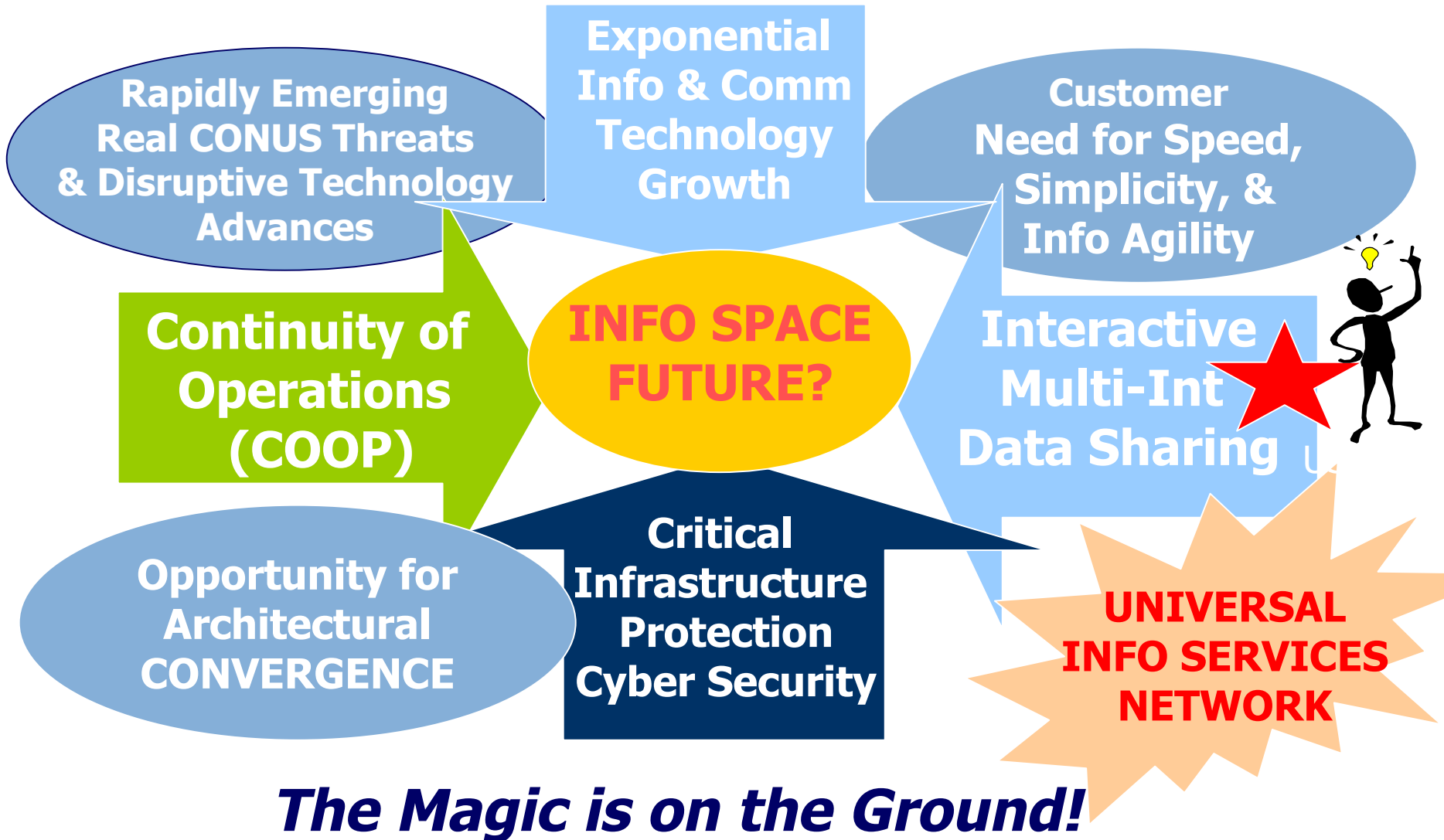


**USERS**

**NRO**  
**Role in Outer Space**  
**and**  
**Info / Cyber Space**



# The Perfect Storm!



UBIQUITOUS Assured Access to Secure INFO & INFO SERVICES!

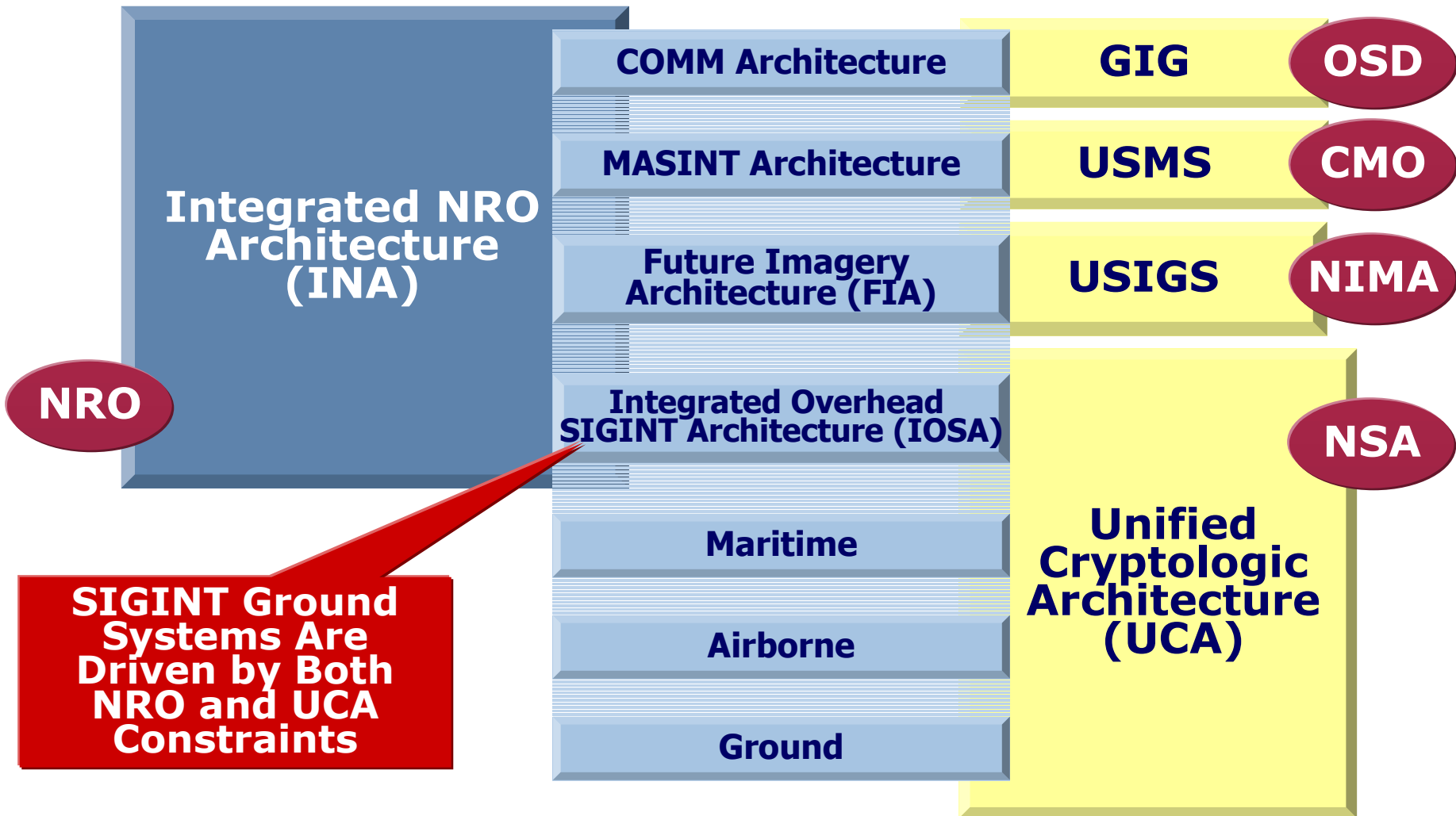


# The Challenge

- **Meeting These Varied Goals Require Integration into Real Ground Systems**
  - ◆ **Ground Operations Must Continue 24 X 7 During any Upgrades**
  - ◆ **Federal Acquisition Policies/Laws Not Aligned with Modern Developmental Strategies**
  - ◆ **Long Budget Planning Timeline**
- **User Expectations Growing with Recent Operational Successes**
  - ◆ **NRO Must Change Quickly**
- **Dynamic, Diverse External Community**
- **The Following Examples from NRO/SIGINT Illustrate the Challenge**



# SIGINT's Architecture in Collaboration Environment with Mission Partners





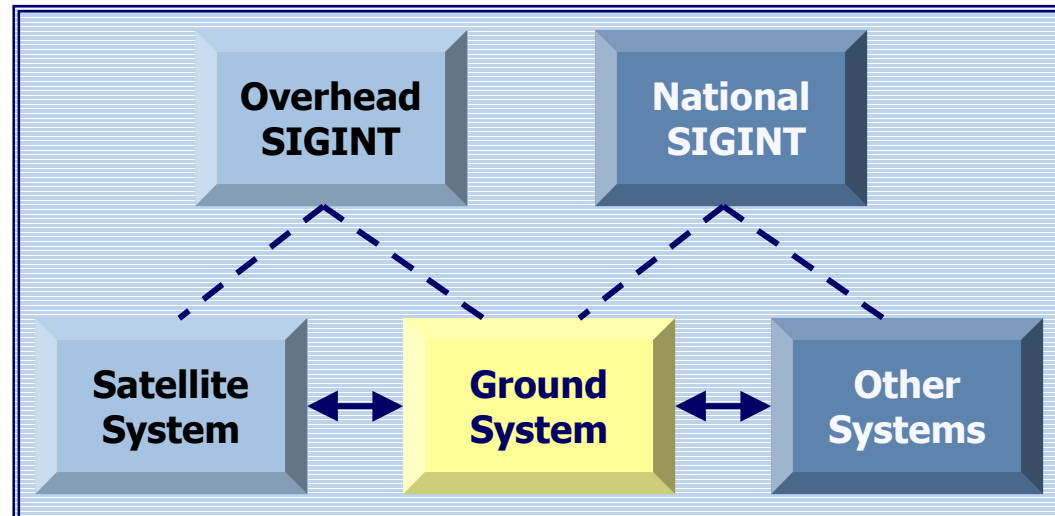
# A *Robust* SIGINT Architecture Required

## ■ Upgrades to Ground Systems Will Follow Evolutionary Path Over Many Years:

- ◆ Must Be Tolerant of Dynamic Change
- ◆ Responsive to Requests for User Enhancements
- ◆ Lower O&M Costs

## ■ *Robust* Architecture Must Support:

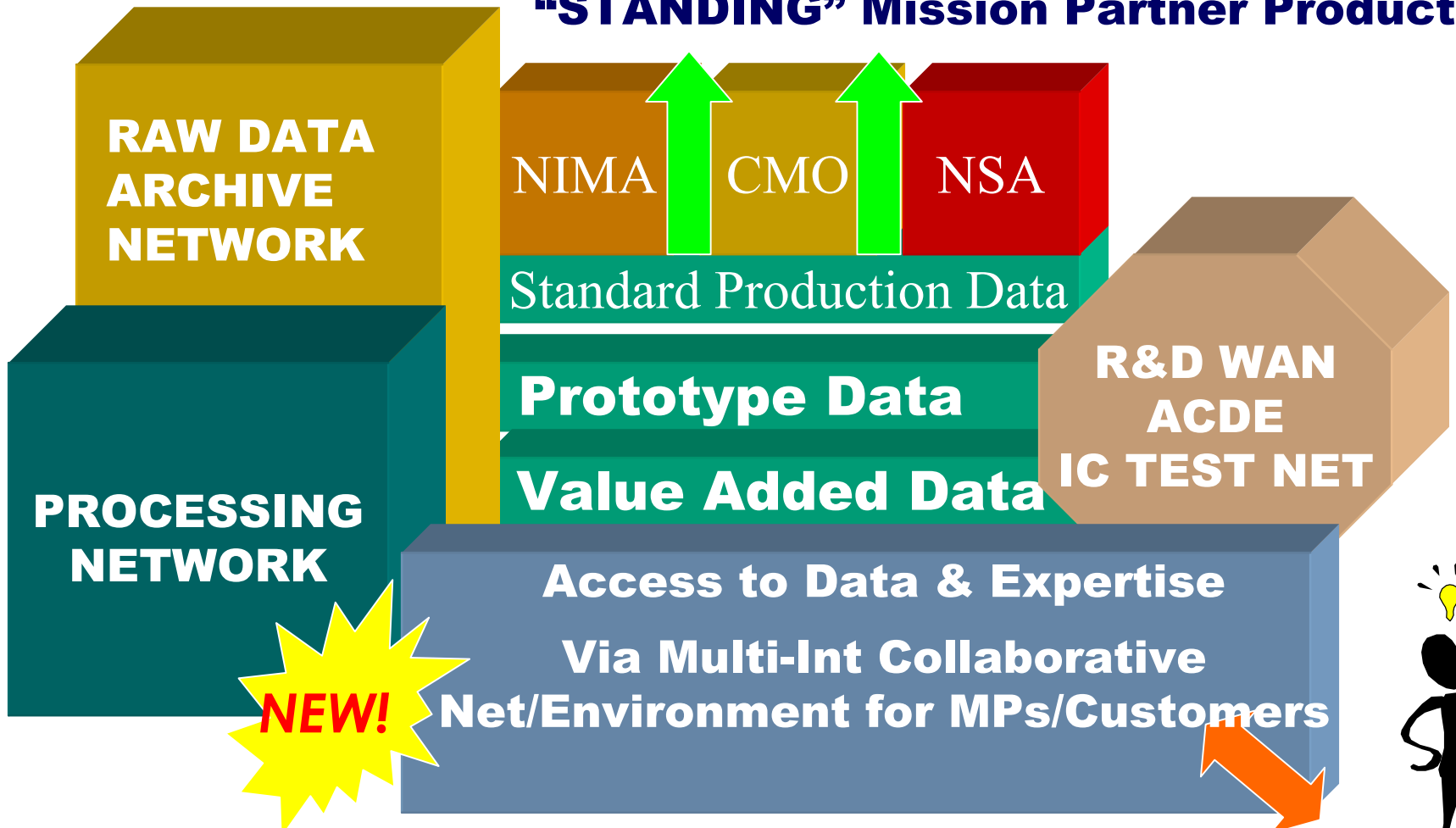
- ◆ Maximum Re-Use of Disparate, Aging Legacy Systems
- ◆ Mechanisms to Insert:
  - ◆ Common Operational Philosophy
  - ◆ New Technology
- ◆ Architectural “Off Ramps”
- ◆ Phased Implementation
- ◆ Cost Defensible





# Path to Success: Meet User Expectations AND Future Needs

## “STANDING” Mission Partner Products

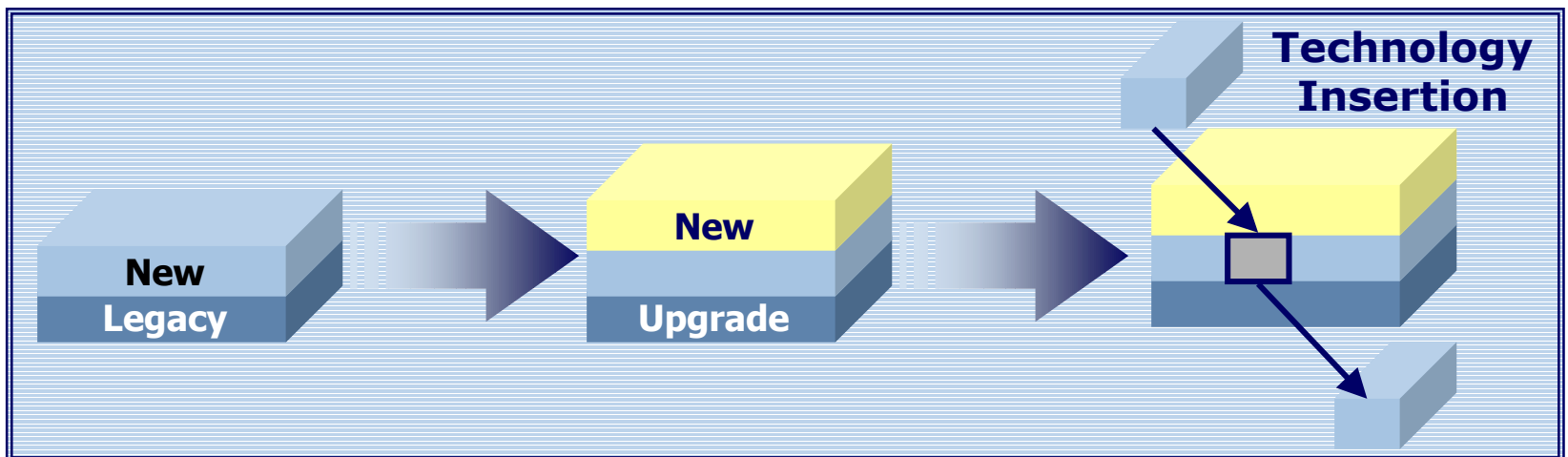


## “ADHOC” Multi-int “Info” Products & Services Network



# Summary

- **Need to Develop a *Robust* Architecture**
  - ◆ Flexible
  - ◆ Layered
  - ◆ On-Going Technology Insertion
- **Move from System of System to Network of Networks**
- **NRO Need Is Common Across Industry**
- **Looking to Community for Creative and Innovative Architectures to Support NRO**





# New Thinking Needed...

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“The same thinking that created the problem cannot solve the problem”

--Albert Einstein