

UNCLASSIFIED



OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

# Empowering Intelligence Integration: The (Future) Role of Ground

L E A D I N G I N T E L L I G E N C E I N T E G R A T I O N

Dawn Meyerriecks  
dawnm@dni.gov

March 2012

"© 2012 by ODNI/AT&F. Published by The Aerospace Corporation with permission."

UNCLASSIFIED



UNCLASSIFIED

OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

LEADING INTELLIGENCE INTEGRATION

# The Value of Integrated Intelligence

	<i>Knowledge</i>	<i>Speed</i>	<i>Precision</i>	<i>Lethality</i> (Air 2 Gnd OPS)
<b>ODS</b>	3200 ISR Sortie Hours	7 Mos Buildup	10 % PGMs ~ 30 SOF Teams	10 % Integ Ops 4 Acft/Tgt
<b>OIF</b>	1700 ISR Sortie Hours	< 3 Mos Buildup	70 % PGMs ~ 100 SOF Teams	90 % Integ Ops 1 Acft/4 Tgt
<b>RESULTS</b>	3X Info Half of the Hours ↓ Footprint	↓ Footprint # Ships Msn Achieve t ↑ Speed of Mnvr	↑ Precision Decisions Collat Dam ↓ RQD Ord	↑ Economy Of Force ↓ Heavy Ord Rqmts

Assistant Director of National Intelligence for Acquisition, Technology & Facilities

UNCLASSIFIED

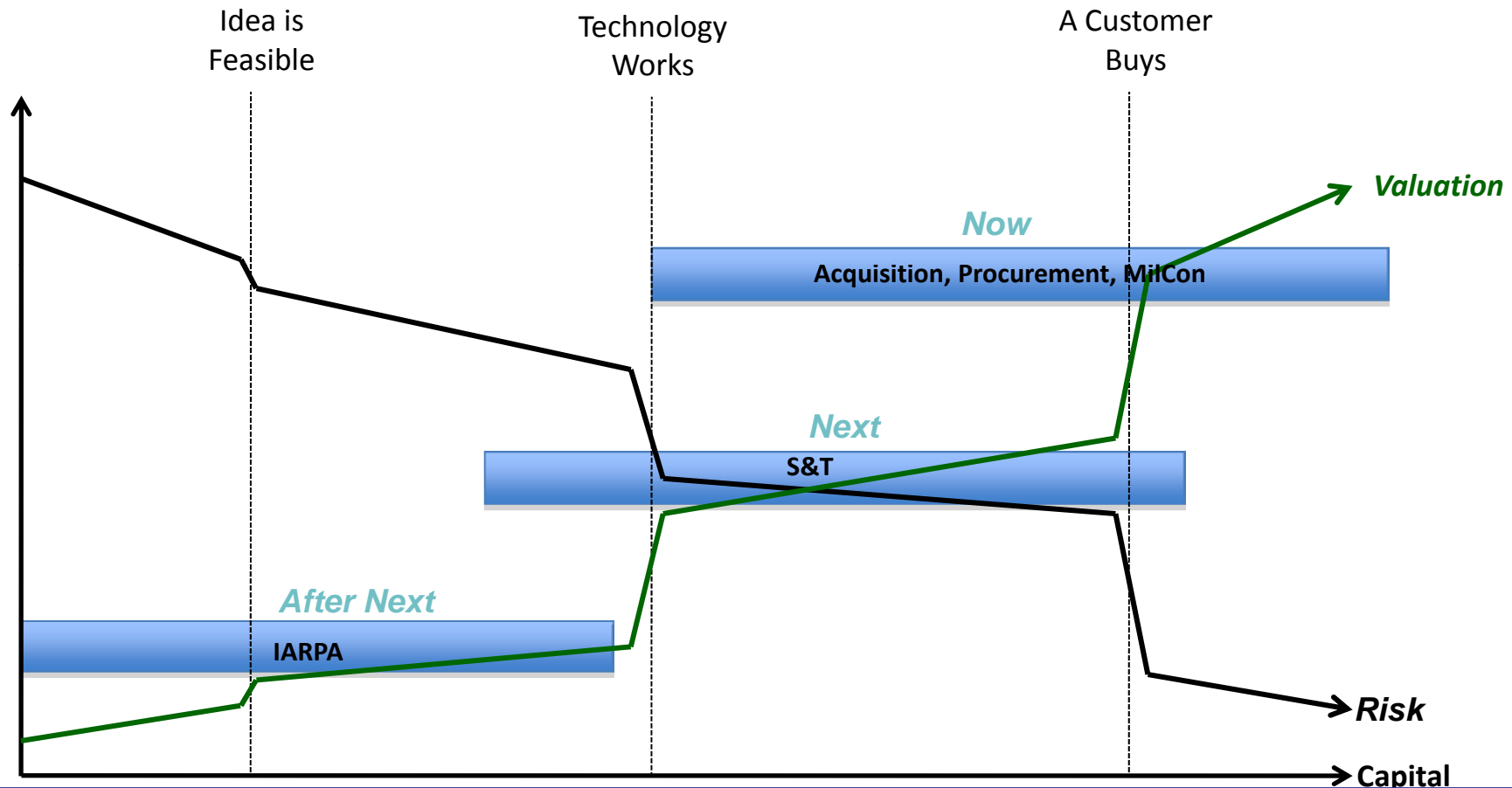


UNCLASSIFIED

OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

L E A D I N G I N T E L L I G E N C E I N T E G R A T I O N

# AT&F Technology Products



**Catalyze delivery of innovative technology-based capabilities solving intelligence challenges.**

Assistant Director of National Intelligence for Acquisition, Technology & Facilities

UNCLASSIFIED



UNCLASSIFIED

OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

LEADING INTELLIGENCE INTEGRATION

# Technology Lifecycle



## Heavy Metal

### Business Characteristics

- Austere Deployment Environments
- Fragile Industrial Base
- Operational Failures Irrecoverable
- High Systems Engineering Complexity
- US IR&D: 5%

### Lifecycle Characteristics

- Multi-year Acquisition Cycles (~10+ yrs)
- Multi-year Production Cycles
- Rigorous Development
- \$B
- Long-lead R&T (e.g., 1st 3 years of 10 year effort)



## Information Technology

- Forgiving Deployment Environments
- Robust industrial base
- Operational Failures Acceptable or Maskable
- Medium Systems Engineering Complexity
- US IR&D: 6.6%

- 18 - 24 Month Production Cycles
- Productivity "epochs" (Client/Server -> Web -> Collaboration -> Services)
- Agile development
- \$M
- Mid- & Long-Lead R&T Mix (e.g., min of 3-4 yrs in front of need)



## Low Production, Miniaturized

- Clandestine Deployment Environments
- Boutique Industrial Base
- Operational Failures Impact Reputation
- Low Systems Engineering Complexity
- US IR&D: 2.2%

- Custom Development
- \$ M
- Mid-lead R&T Mix (e.g., min of 2-3 yrs in front of need)

Assistant Director of National Intelligence for Acquisition, Technology & Facilities

UNCLASSIFIED



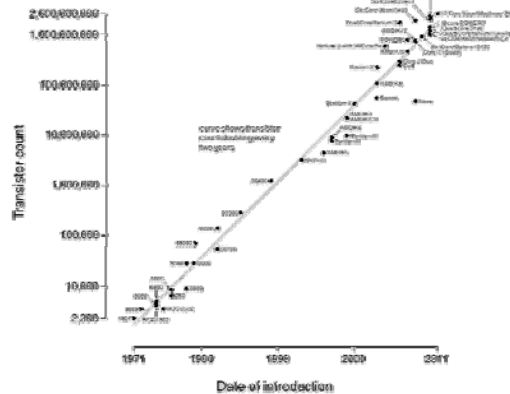
UNCLASSIFIED

# OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

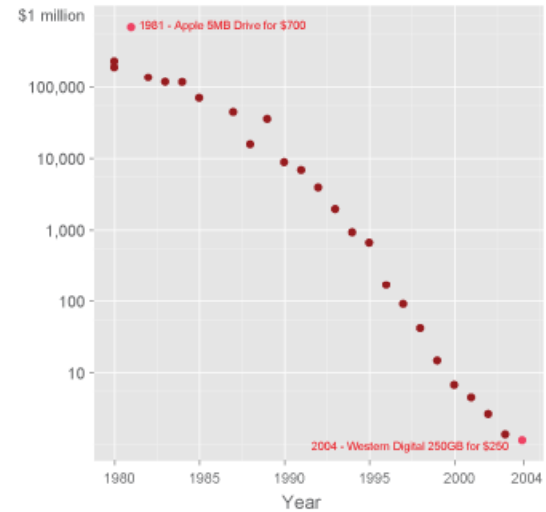
LEADING INTELLIGENCE INTEGRATION

## IT Trends

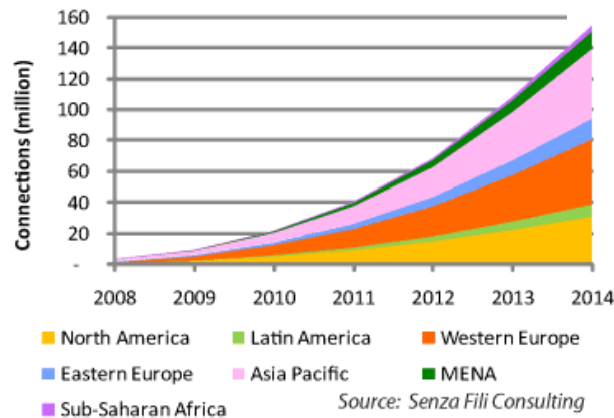
Microprocessor Transistor Counts 1971-2011 & Moore's Law



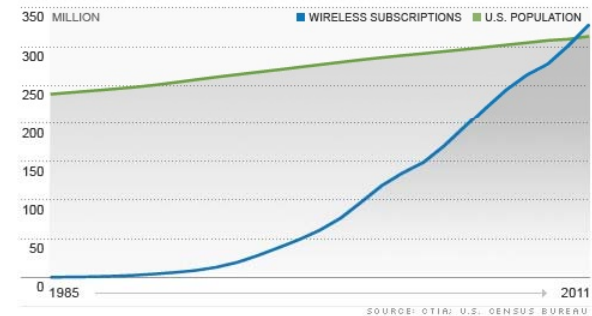
How Much for a Gigabyte of Storage?



Vertical connections by region



U.S. WIRELESS DEVICES OVERTAKE U.S. POPULATION



Assistant Director of National Intelligence for Acquisition, Technology & Facilities

UNCLASSIFIED





UNCLASSIFIED

OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

LEADING INTELLIGENCE INTEGRATION

# Space Trends

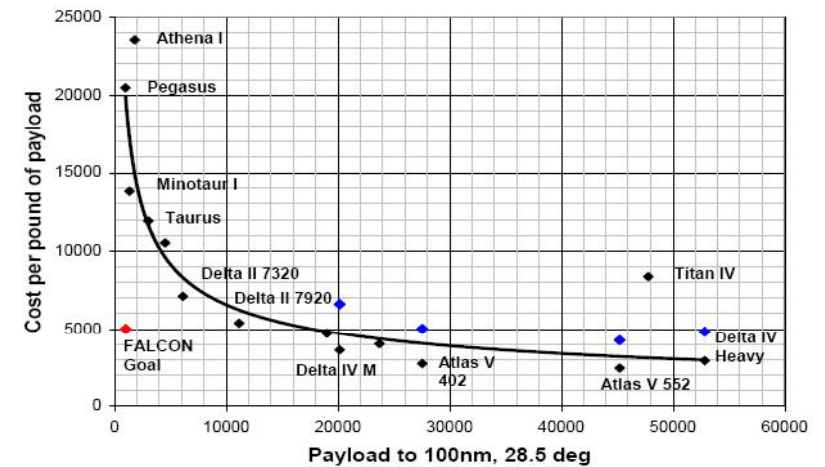
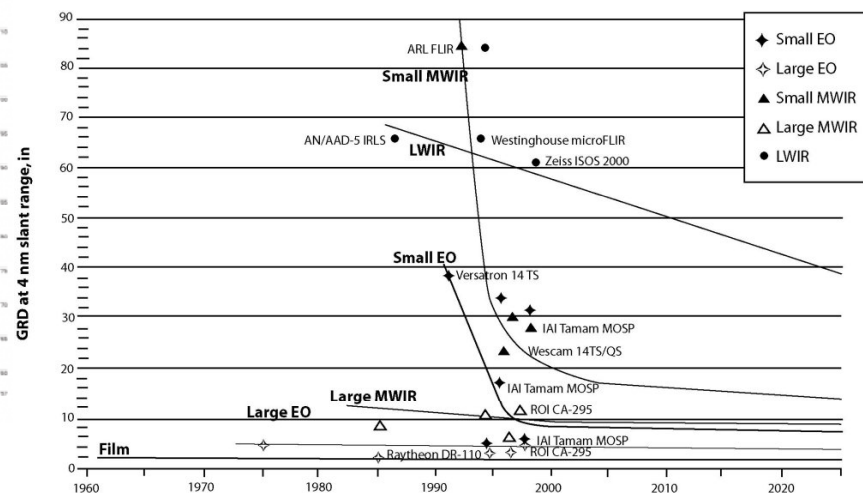
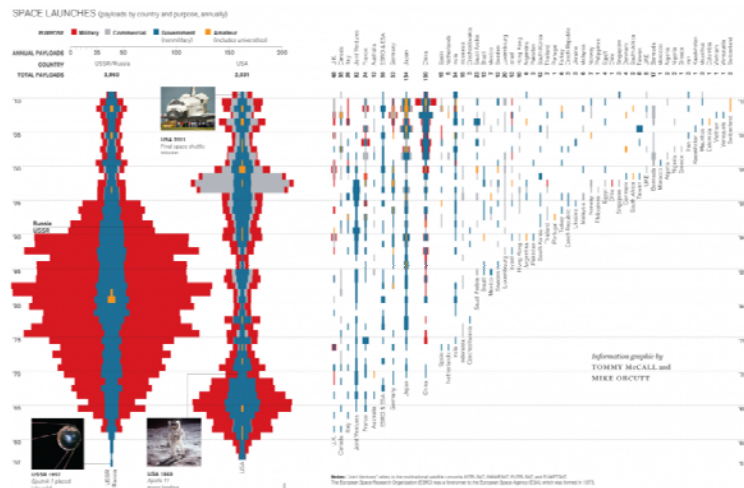


Figure 2. Launch Costs of Common Space Launch Systems



Assistant Director of National Intelligence for Acquisition, Technology & Facilities

UNCLASSIFIED



UNCLASSIFIED

OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

L E A D I N G I N T E L L I G E N C E I N T E G R A T I O N

# What's the Deal??

Assistant Director of National Intelligence for Acquisition, Technology & Facilities

UNCLASSIFIED



UNCLASSIFIED

OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE  
L E A D I N G I N T E L L I G E N C E I N T E G R A T I O N

## Space Futures

- Why not near-real-time cross-platform tipping, queueing, and tasking?
- Why not continuous near-real-time communications?
- Why not prove “smart analytics” on the ground, then migrate to space?

**Ground CAN and SHOULD leverage IT trends.**

Assistant Director of National Intelligence for Acquisition, Technology & Facilities

UNCLASSIFIED



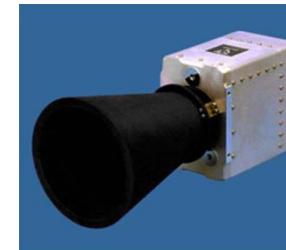
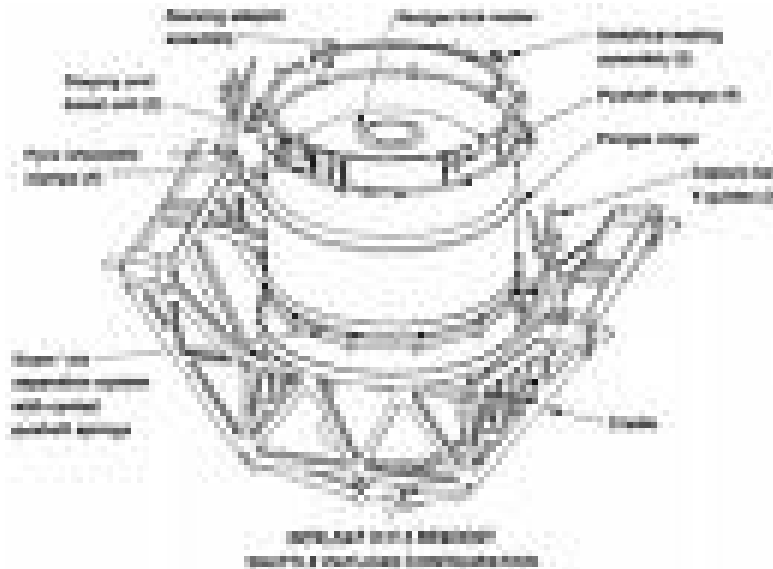
UNCLASSIFIED



OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

LEADING INTELLIGENCE INTEGRATION

# Modular Bus, Commoditized Components



A star tracker module, similar to those on the GP-B spacecraft.

**NRE Emphasis on Payloads & Phenomenology**

Assistant Director of National Intelligence for Acquisition, Technology & Facilities

UNCLASSIFIED

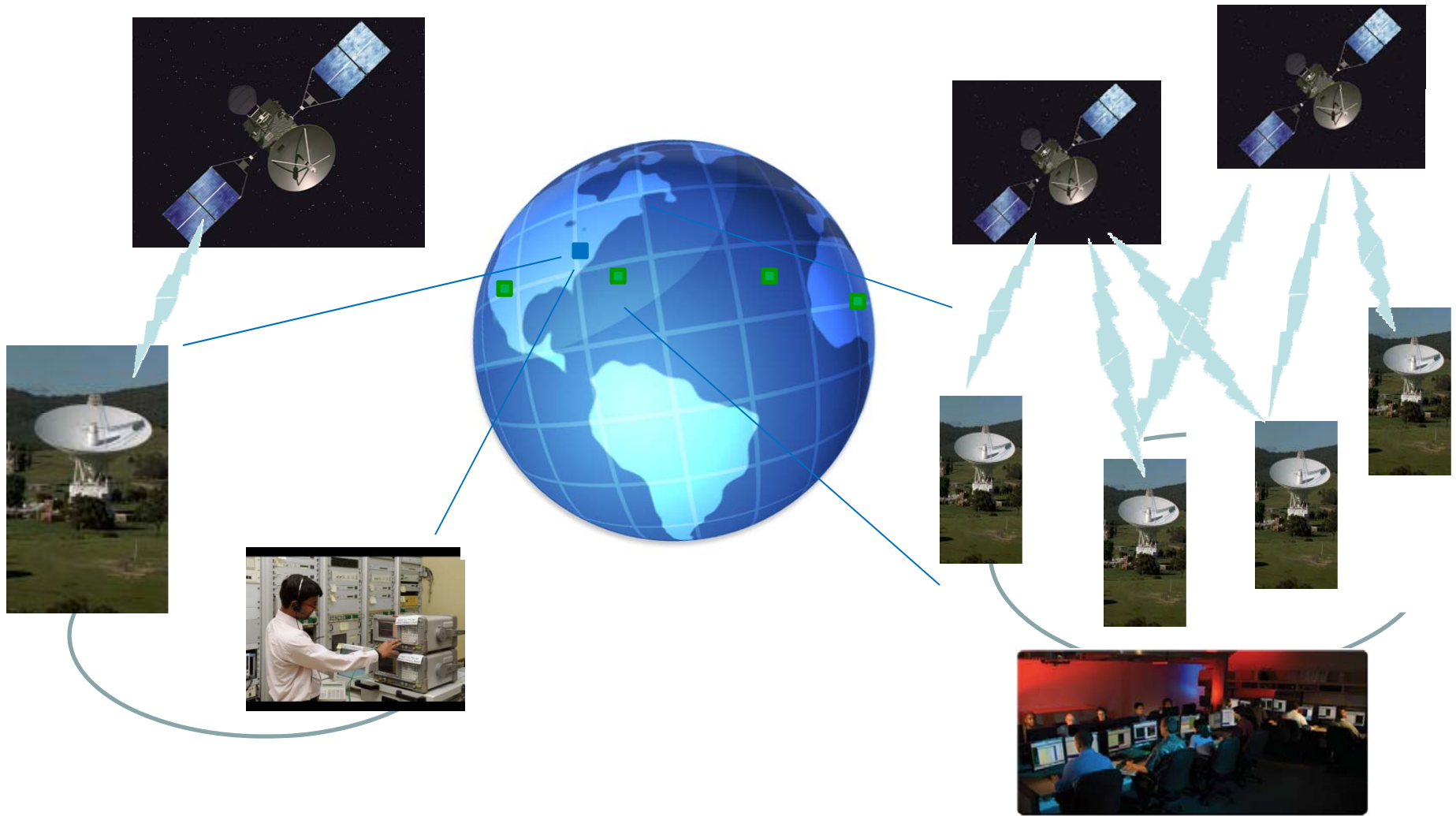


UNCLASSIFIED

OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

LEADING INTELLIGENCE INTEGRATION

# Play-n-plug Ground Constellation



Assistant Director of National Intelligence for Acquisition, Technology & Facilities

UNCLASSIFIED



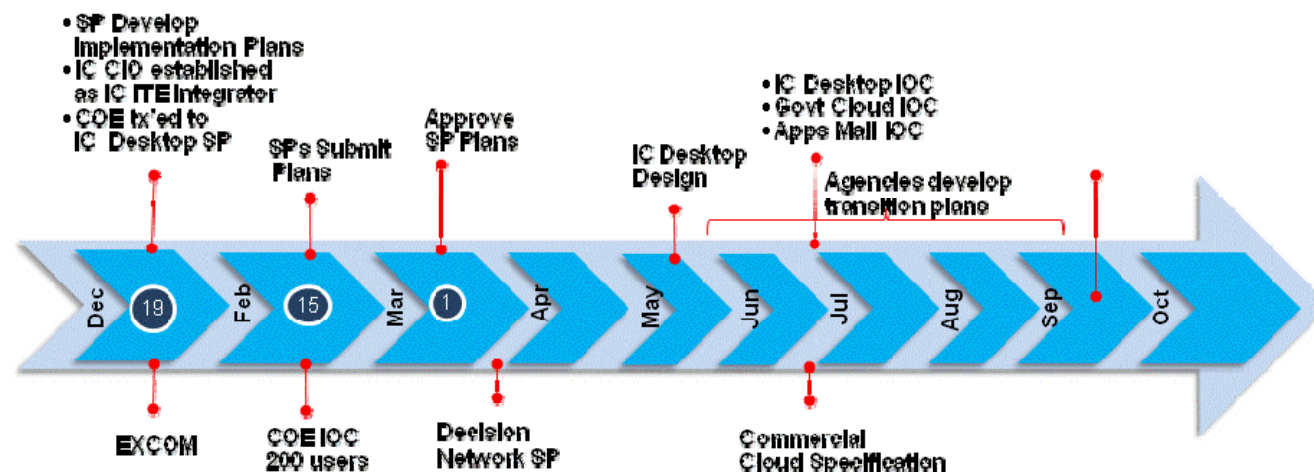
UNCLASSIFIED

OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

LEADING INTELLIGENCE INTEGRATION

# Play-n-Plug Enterprise Ground

- Leverage IC IT Enterprise Strategy
  - Desktop Environment: VDI-based: DIA/NGA
  - Cloud Hosting: Utility, Data, Analytics: CIA, NSA
  - Apps Mall: OWF: NSA
  - Apps Stores: CIA, DIA, NGA, NRO, NSA



Assistant Director of National Intelligence for Acquisition, Technology & Facilities

UNCLASSIFIED



UNCLASSIFIED

OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

L E A D I N G I N T E L L I G E N C E I N T E G R A T I O N

## Activity-Based Intelligence

- Multi-INT
  - Provide understanding of patterns of behavior
  - Enable development of plots rather than assessing characters
  - Tip & Cue Other Collection & Analysis
- Increase focus on mission utility
- $\triangle$  Intel Paradigm to include time dimension

Assistant Director of National Intelligence for Acquisition, Technology & Facilities

UNCLASSIFIED



UNCLASSIFIED

OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE  
L E A D I N G I N T E L L I G E N C E I N T E G R A T I O N

## The Ground Community Must:

- *Demonstrably* **Focus** on Mission Outcomes
- **Solve** Problems *Collaboratively*
- **Innovate** *Relentlessly*

Catalyze delivery of innovative technology-based capabilities solving intelligence challenges.

Assistant Director of National Intelligence for Acquisition, Technology & Facilities

UNCLASSIFIED