BUREAU OF ARMS CONTROL,
VERIFICATION AND COMPLIANCE

From Lettuce to Warheads

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Outline

- Why We Do What We Do
- What Treaties? What Data?
- 2013 Priorities
- The Internet of Things
- New Opportunities, New Challenges

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Why We Do What We Do

Trust,

But Verify . . . .

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Why We Do What We Do

Rules must be binding.
Violations must be punished.
Words must mean something.
The world must stand together.

President Obama in Prague, Czech Republic on April 5th 2009

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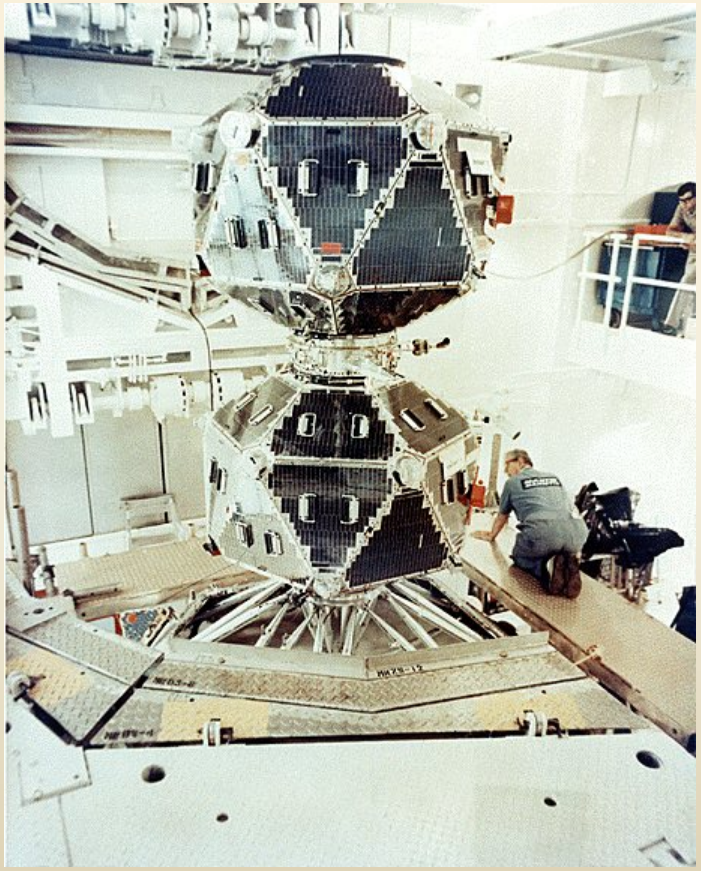
Old School Monitoring



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What Treaties?

- Nuclear Nonproliferation Treaty
- Limited Test Ban Treaty
- Comprehensive Test Ban Treaty
- Chemical Weapons Convention
- Biological and Toxin Weapons Convention
- New START Treaty

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Data types

- Seismic data
- Infrasound data
- Multispectral data
- Imagery
- X-omics
- Other physical spectra

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Today's Challenges

- Smaller treaty-limited equipment
- Sensors get old
- Fiscal realities

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Bottom Line: Business as Usual Won't Get the Job Done

~ we're the yeast ~

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The Verification Technologies R&D Needs Document

"…short-term efforts to adapt and leverage current technologies to meet current needs"

"…long-term basic research to develop innovative new technologies to help us develop and determine future policy."

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The 2013 Priorities

- Ubiquitous Sensing
- Understanding the individual nuclear warhead

www.FBO.gov, keyword “V-fund”

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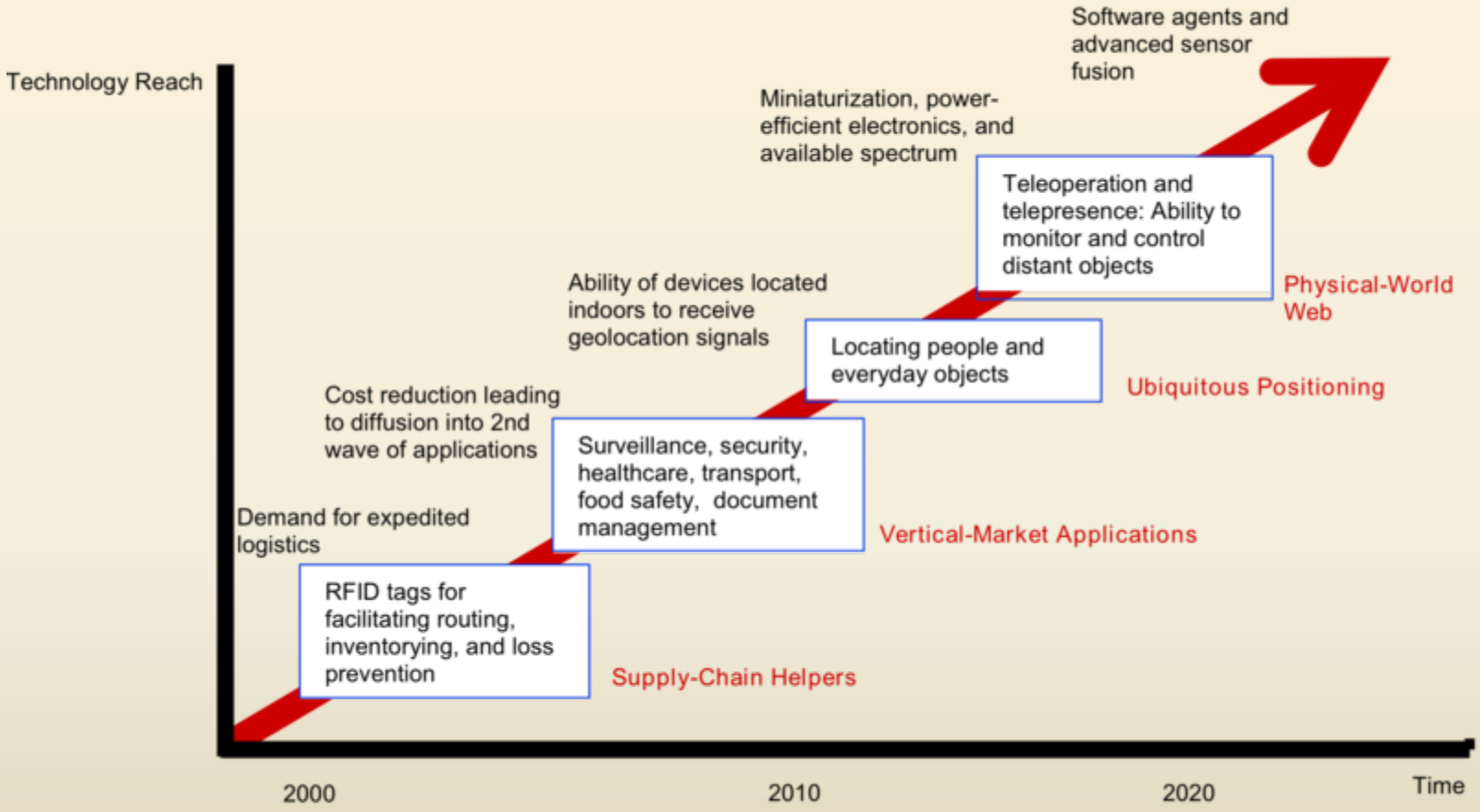
TECHNOLOGY ROADMAP: THE INTERNET OF THINGS



Source: SRI Consulting Business Intelligence

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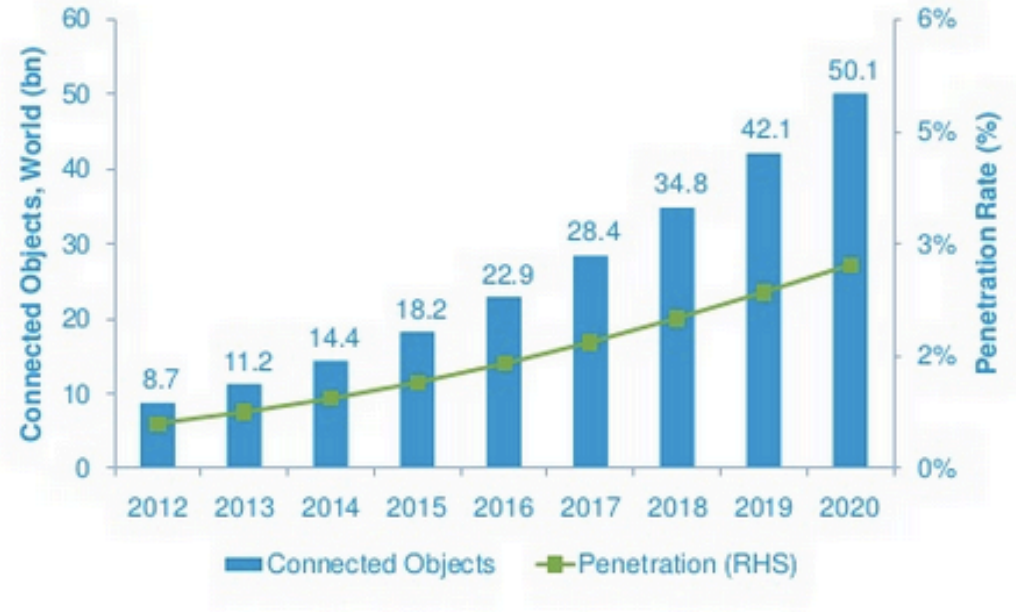
The Internet of Things

- Mining microdata
- Sequencing the DNA of data

Number of Connected Objects Expected to Reach 50bn by 2020



Penetration of connected objects in total 'things' expected to reach 2.7% in 2020 from 0.6% in 2012

Source: CCS, 2013

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"In other words, the more connections the better. But even with 50 billion things, billions more people, and zetabytes of data trying to tell us what to do, we'll still be able to make poor decisions."

Dan Farber, CNET

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"In other words, the more connections the better. But even with 50 billion things, billions more people, and zetabytes of data trying to tell us what to do, **we'll still be able to make poor decisions**."

Dan Farber, CNET

Arms Control in the Information Age

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A red balloon in San Francisco

Locations of the red balloons in the DARPA Network Challenge

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New Opportunities, New Challenges

- Public Challenges
- The Arms Control Essay Contest
- South by Southwest
- The AgglE Challenge
- The Steinbeck Innovation Cluster

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Public Challenges

- "How Can the Crowd Support Arms Control Transparency Efforts?"
- "What Information Technology Tools and Concepts Can Support Future Arms Control Inspections?"

The Arms Control Essay Contest

- Monterey Institute of International Studies
- The PIR Center (The Russian Center for Policy Studies)

"Innovation in Arms Control Treaty Verification and Compliance Monitoring: Unconventional Solutions for Unconventional Problems."

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South by Southwest Interactive

- Austin, Texas

"Mobilizing Ingenuity to Strengthen Global Security"

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The AggIE Challenge

- Texas A&M
  - Senior “Capstone” projects
  - Minimal cost
- Ubiquitous Sensing
  - Four scenarios

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The Steinbeck Innovation Cluster

- Salinas, California
- Bringing Silicon Valley innovation to Central Valley agriculture
- Lettuce sensors to nuclear warheads
- Coder Dojo

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We're not Policy Wonks – We're Technology Ninjas

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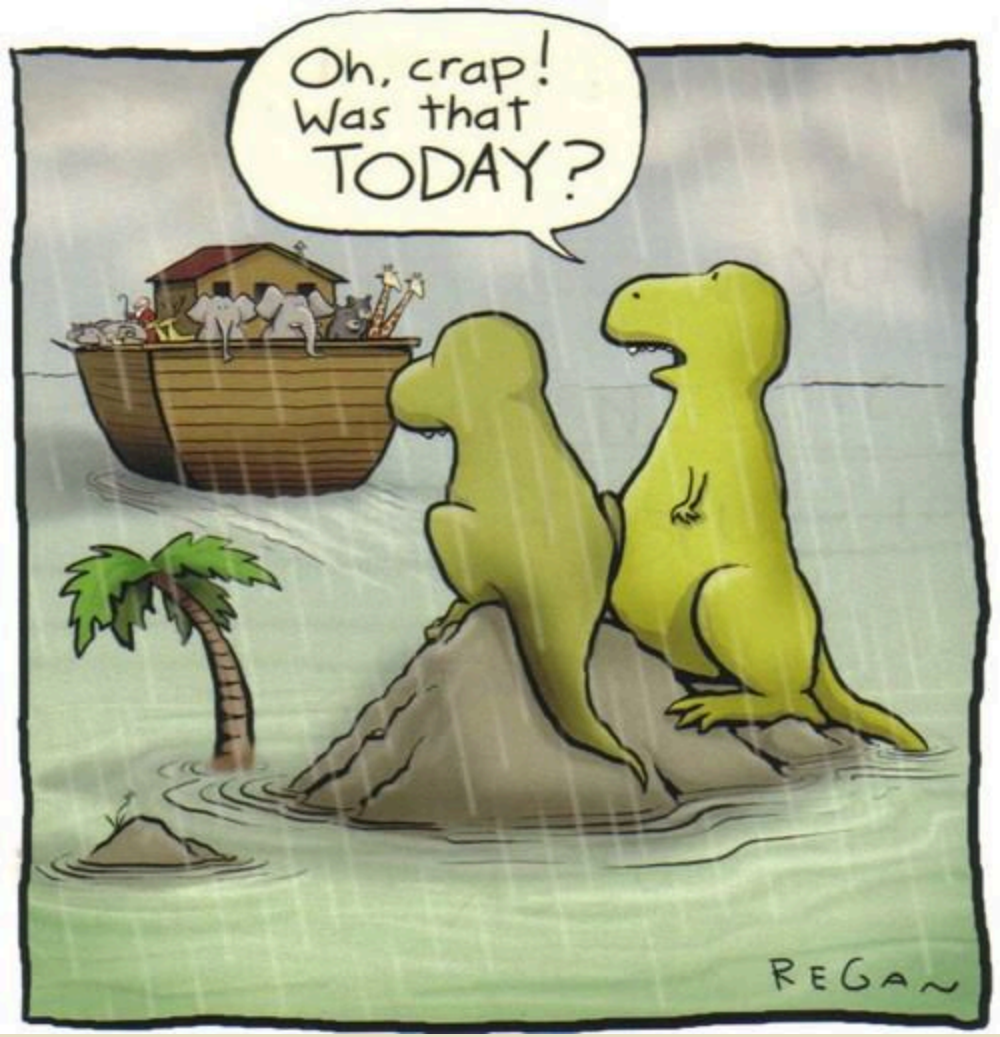
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