

Unique Item Identification



Where is this train headed?

Frank L. Prabel III

Boeing Aerospace Support – Supply Chain Services
Strategic Planning & Business Development

The Mandate -

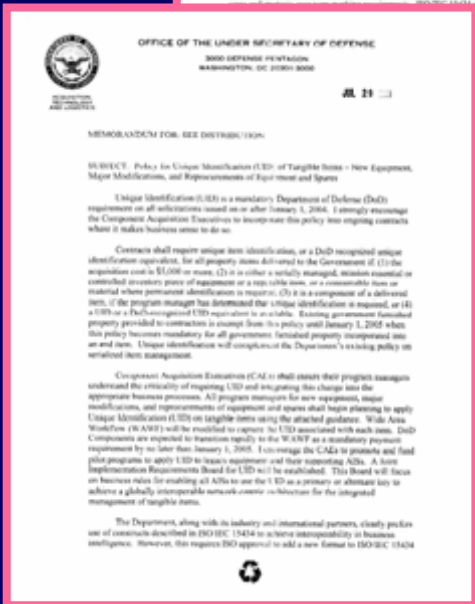
July 29, 2003

Unique Identification (UID) is a mandatory Department of Defense (DoD) requirement

Michael W. Wynne

A Defining Moment in History!

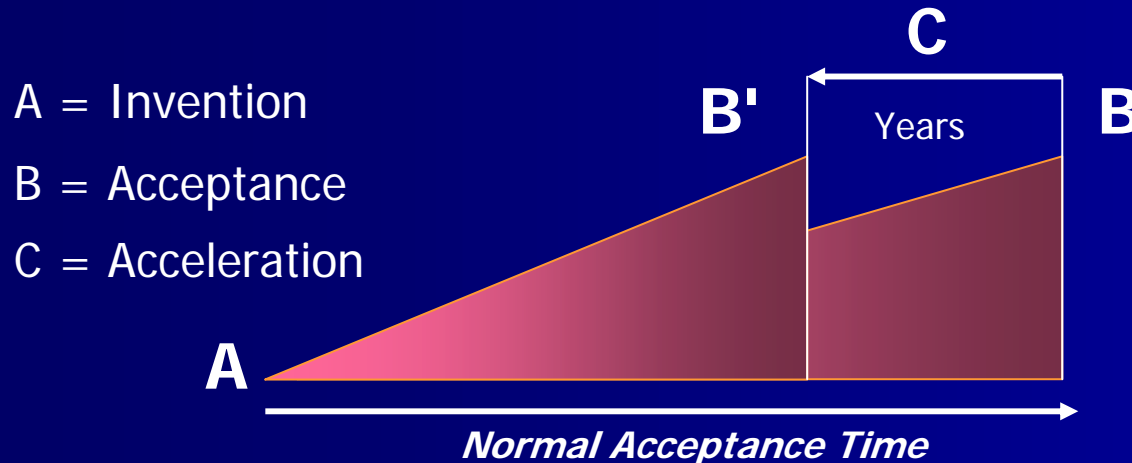
- at least for information technology



The Mandate -

Unique Item Identification

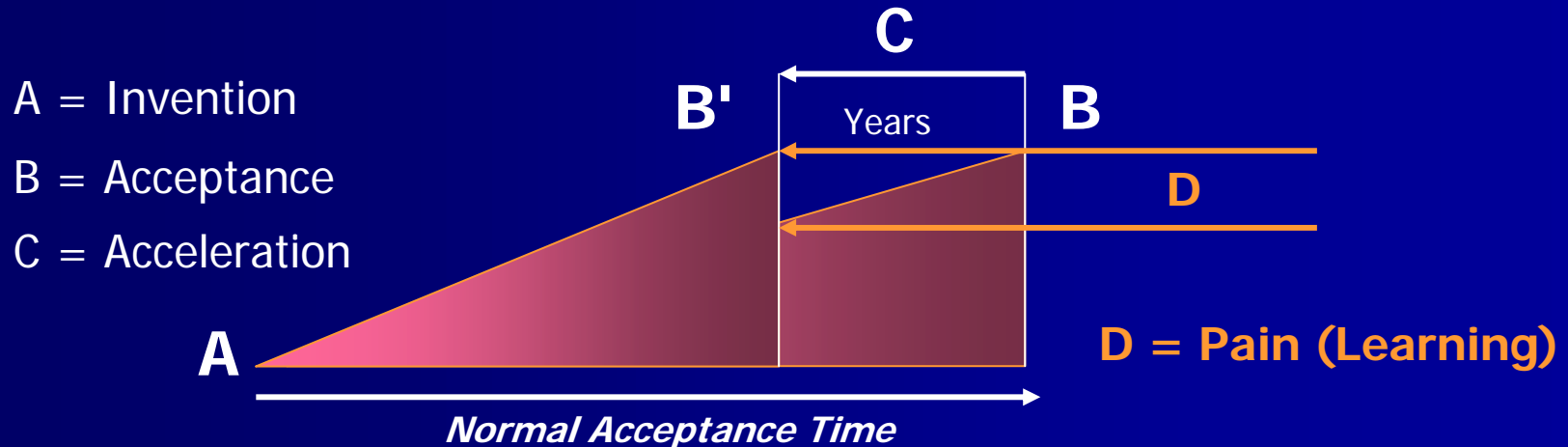
- Fundamentally changed how we will do business
- Accelerated the technology acceptance curve
- Is not free



The Mandate -

Unique Item Identification

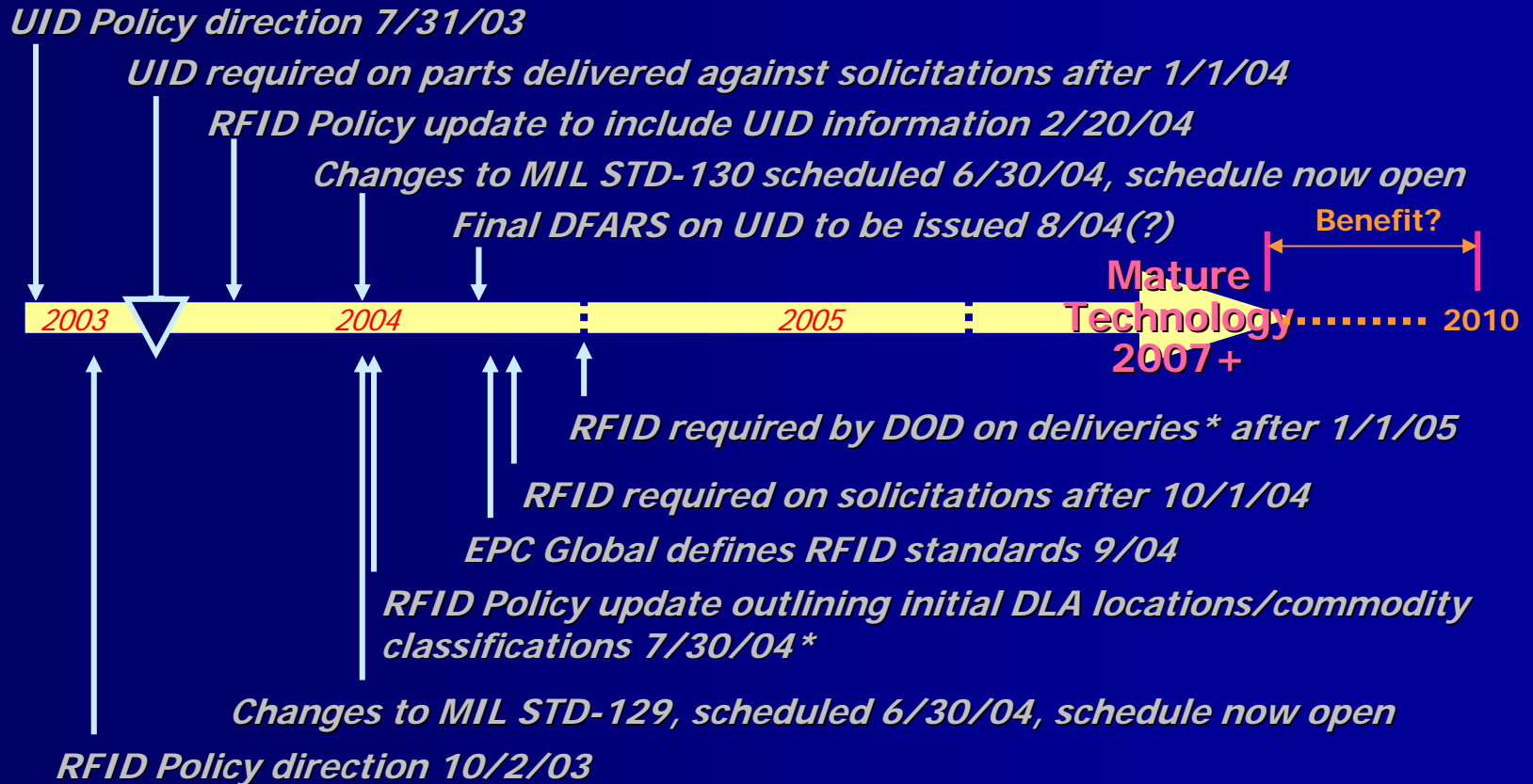
- Fundamentally changed how we will do business
- Accelerated the technology acceptance curve
- Is not free



The Pain Continuum -

An RFID/UID Chronology

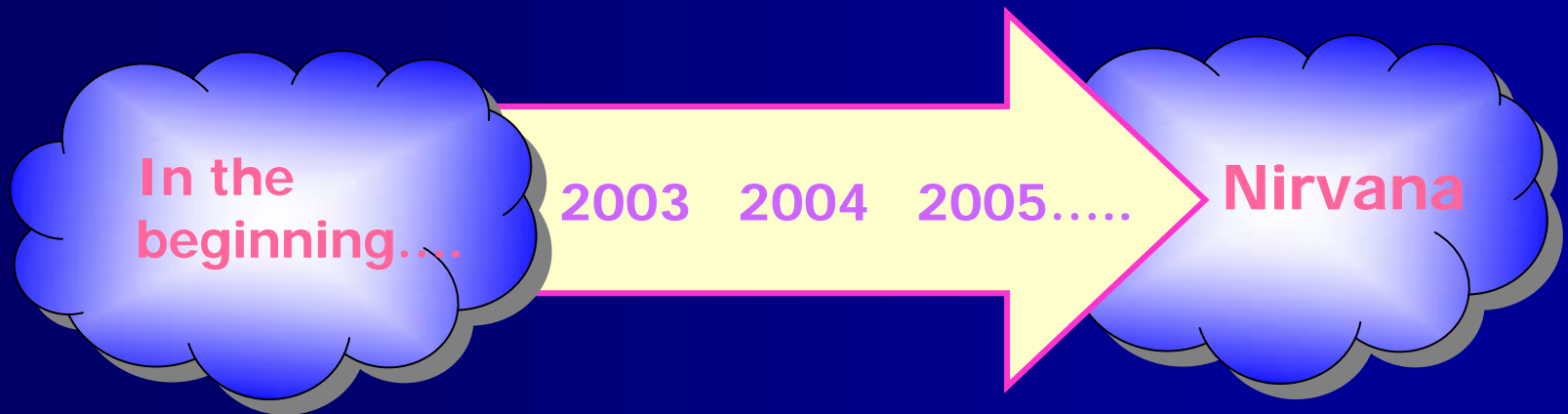
...and Immediate Concerns



* To Susquehanna and San Joaquin Depots Commodity Classes I, II, VI, IX only

Unique Item Identification

A never ending journey



Unique Item Identification



Perfect knowledge of product identity!

- Better than DNA code analysis

Unique Item Identification

What is “perfect product knowledge”?

It's undisputed truth !

- Trusted confirmation of what things are, or aren't
 - Configuration
 - Maintenance
 - Supply chain
 - Other areas..... ***But!***

*Benefits accrue only when integrated
into an Enterprise Information System.....*

Unique Item Identification

When integrated, will facilitate readiness & safety!

- 1200 M60 tanks taken out of service for defective gun mount bolts (no date provided in reference)
- In 1987 fasteners slated for installation in U.S. Navy aircraft carrier catapults, nuclear submarines and the Bradley Fighting Vehicle turned out to be counterfeit

Source: Michael Valenti, Associate Editor Mechanical Engineering 2/93

Unique Item Identification

Is not the end state, it's an enabler -

In the
beginning....

There was the pencil

and it was lacking!

largely because it was operated by a person....

who made mistakes!

A miracle
happened -



This too was lacking - same reason as the pencil

Unique Item Identification

How observant are you !

What was the name of the company that manufactured the computer on the previous slide?

Unique Item Identification

Other solutions emerge to reduce input errors -

Machine Readable Code



Foil Barcode Labels

Polyester Barcode Labels

Aluminum Barcode Labels

UID / Spec 2000 Labels

Fixed Asset Software

Nameplates

Unique Item Identification

We are making progress -

But still not there -

- Tags & labels can fall off
- Packaging can become separated from contents
- Tags, labels, and RF buttons can become soggy



Unique Item Identification

On the right track.....but still not quite....

CH 47 - New Build Marking



Current



LABEL

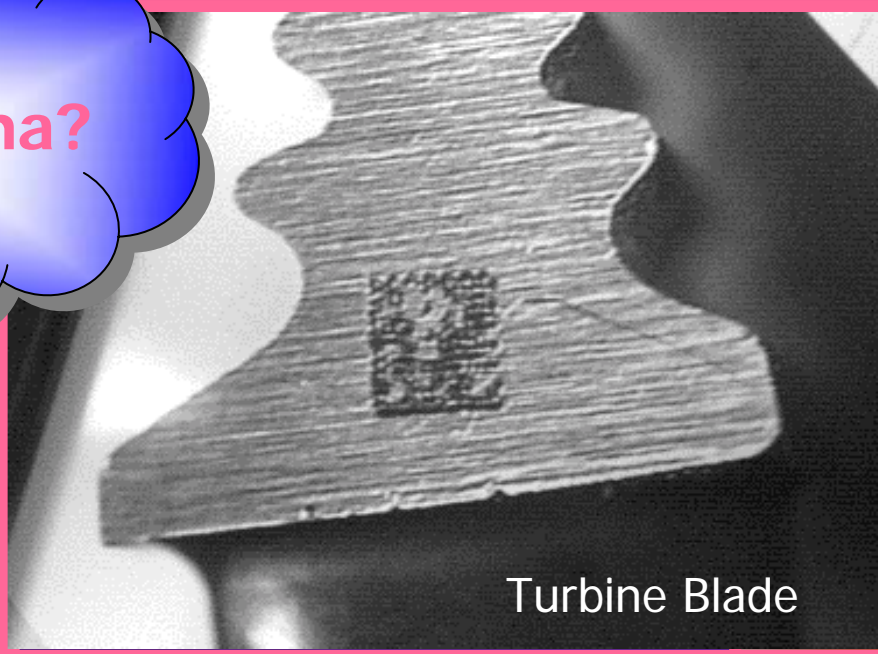


New

Unique Item Identification

Looking much better and with a little time.....

Is direct parts marking the solution?



Unique Item Identification

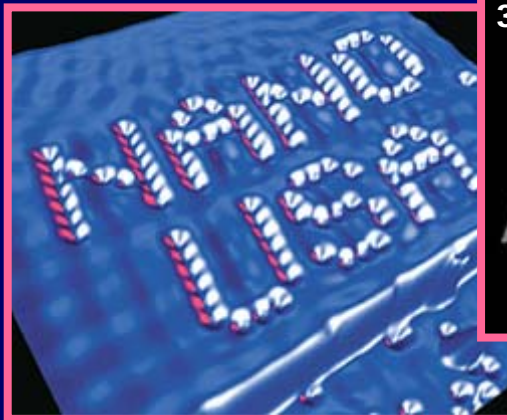
Does nanotechnology have a role?



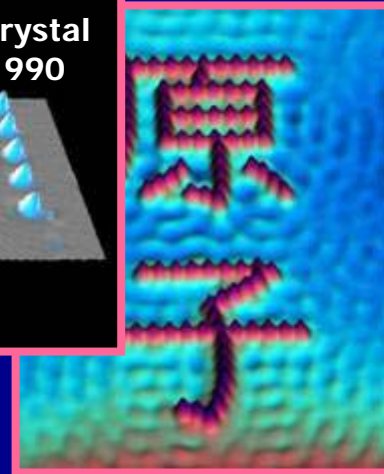
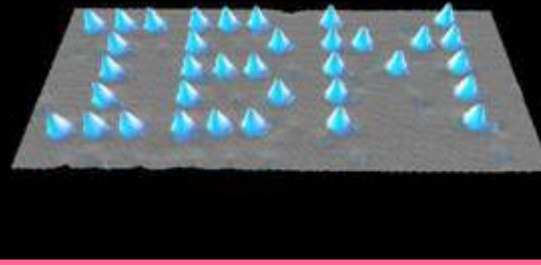
Nanometer: Ten shoulder-to-shoulder Hydrogen atoms (blue balls) span 1 nanometer. DNA molecules are ~ 2.5 nanometers wide.

Unique Item Identification

Can the nanosciences achieve UID Nirvana?



35 Xenon atoms on nickel crystal
less than 3 nanometers -1990



Technology has never had this kind of precise control; all of our technologies today are bulk technologies. We take big chunk of stuff and hack away at it until we're left with the object we want, or we assemble parts from components without regard to structure at the molecular level. Precise atomic level fabrication has previously only been done by living biological organisms.

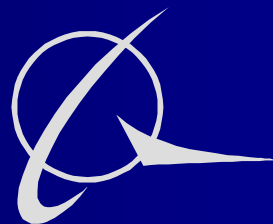
- John Walker 1990

Unique Item Identification

Summary: Thoughts at the bottom line -

- The time is right for UID implementation
- Benefits to the maintainer will not begin to materialize until ~ 2010
- UID is not free; there is a cost to marking parts
- Cost savings will be realized only if the information is integrated into an enterprise level information management system
- Unknowns - We don't know, what we don't know
- UID will achieve improvements but we don't know what issues lurk under the surface





BOEING®

For ever new frontiers