



Executive Briefing

The Open Systems Approach

*Keeping up with
the changing world...*



*...how open systems
can benefit your
program.*

Exploring open systems

Five Questions we're going to answer...

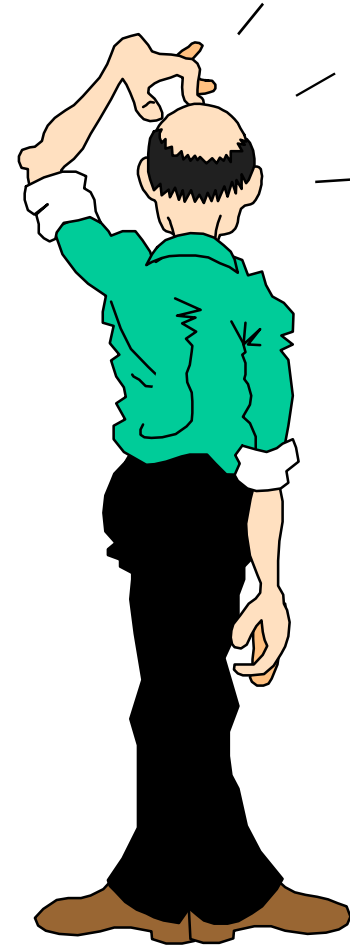


- What are open systems?
- What are the benefits?
- How they are being used?
- How can you use open systems?
- Where can you get help developing an open systems strategy?

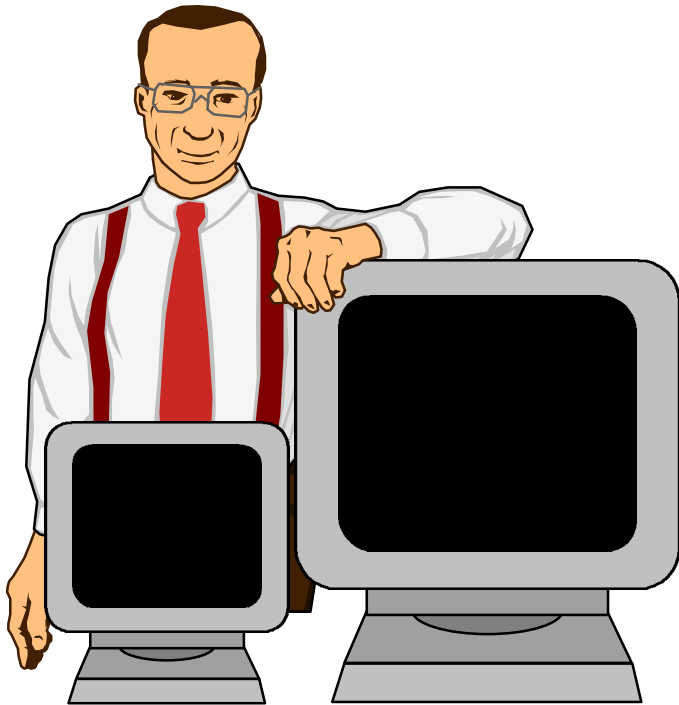
And, one we want to ask...



When you hear the term
“open systems,” what
comes to mind?



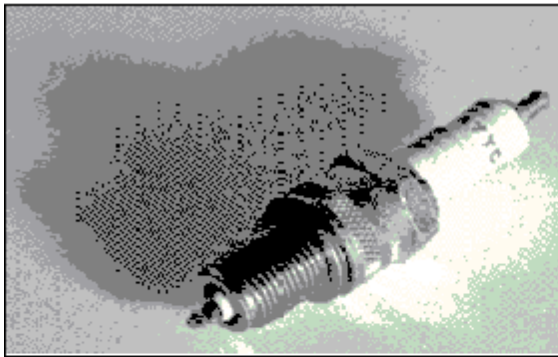
Many people think open systems applies only to...



- Software
- Computers
- Electronics

*These use an open
systems approach, but
open systems is a much
broader concept.*

Here's some common open systems...



In weapons systems, the adoption of
the open systems approach is nothing
short of...

Revolutionary!



Here's how open systems got started



Dr. Paul G. Kaminski, the former
Under Secretary of Defense for
Acquisition and Technology

Key Milestones

29 June 94: Directed “Greater use of performance and commercial specifications and standards.” (*SEC DEF*)



29 Nov 94: Use an open systems approach for acquisition of weapons systems electronics (*USD(A&T)*)

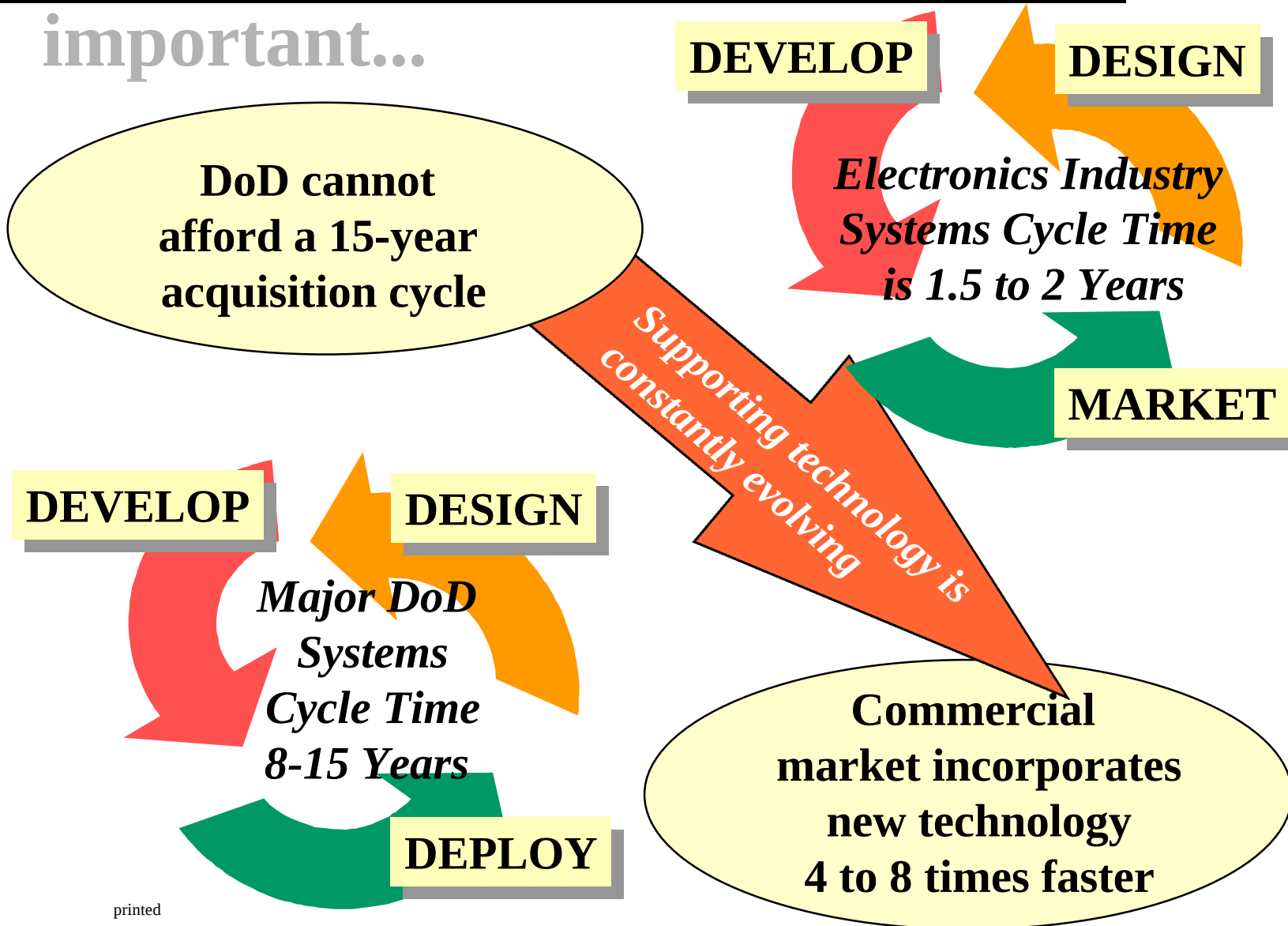


15 March 96: Directives expanded to include an open systems approach to all systems elements (*DoD 5000.2-R*)



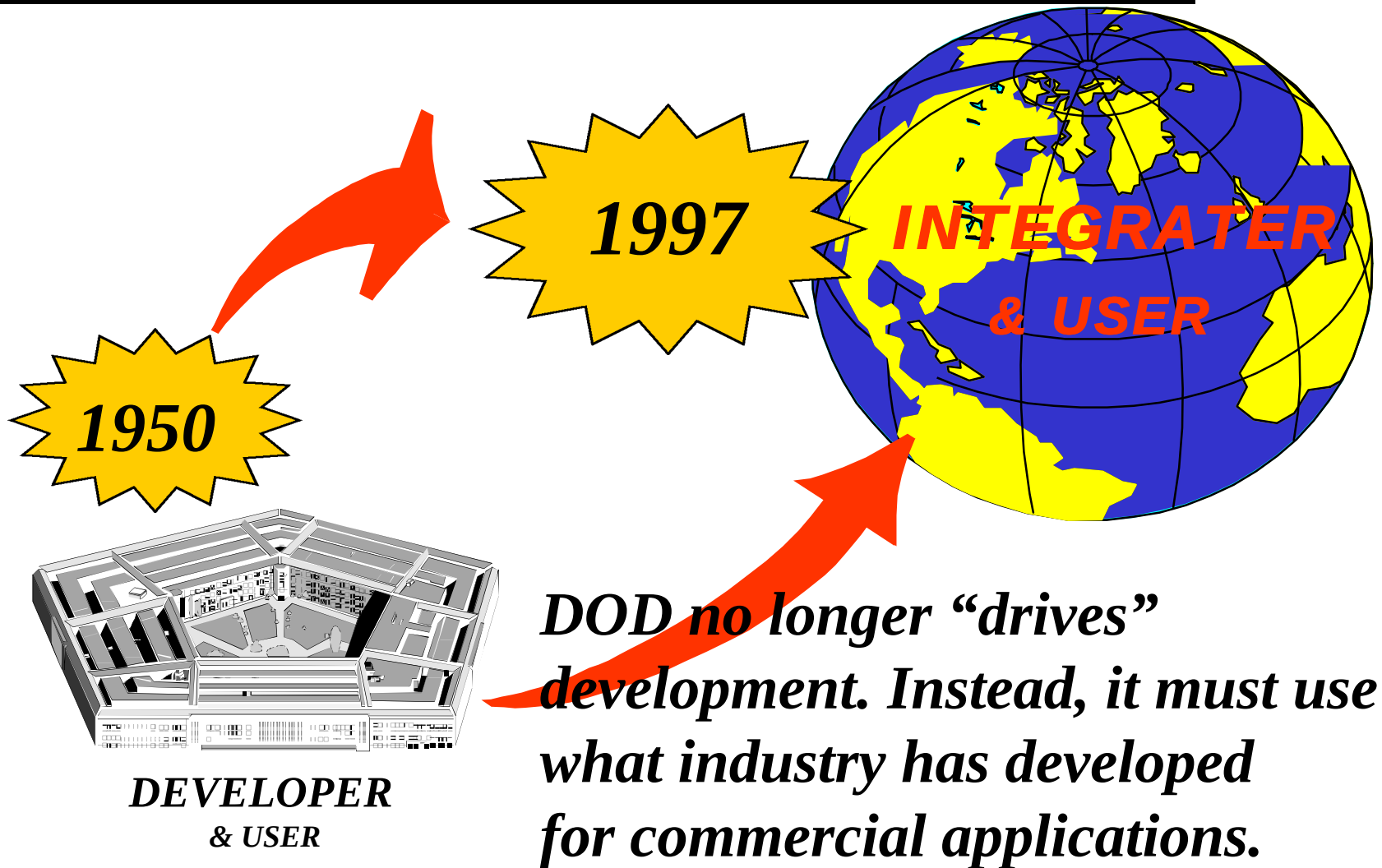
17 October 96: OS-JTF Satellite Broadcast
“At DoD, it’s our responsibility to make sure that we always have access to cutting edge technologies and products. Open systems help prevent ourselves from being locked into proprietary technology and outdated systems.” (*Dr.Kaminski*)

Here's why open systems are so important...





Another reason...



Open Systems Approach is ...

An integrated business and technical strategy

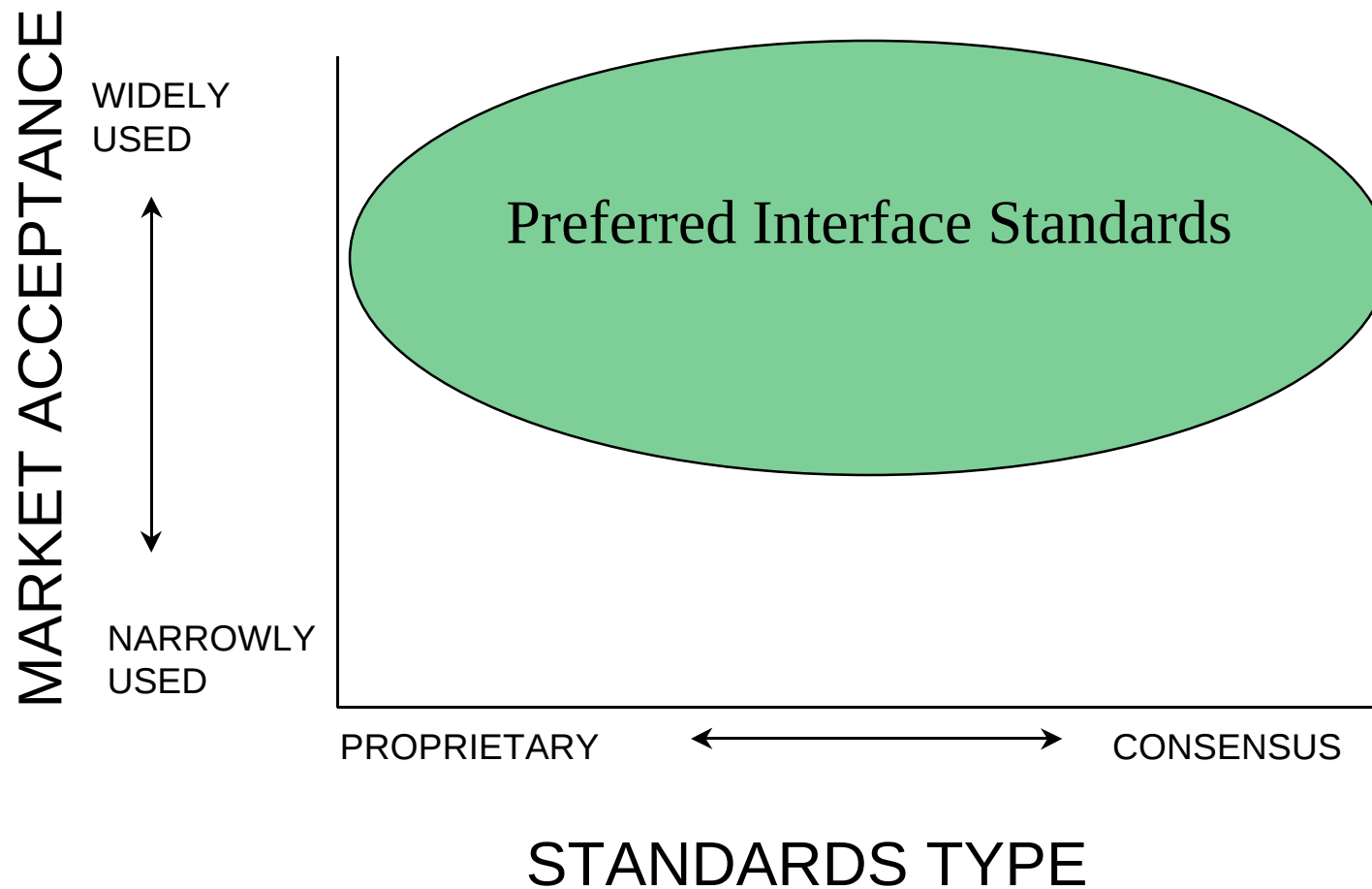
- A key element of a program's Acquisition Strategy
- A means to field superior systems more quickly and more affordably

DoD 5000.2-R (Change 3)

23 March 1998

For more information: <http://www.acq.osd.mil/osjtf/OS5000Chg3.doc>

OPEN SYSTEM INTERFACES



Open systems also

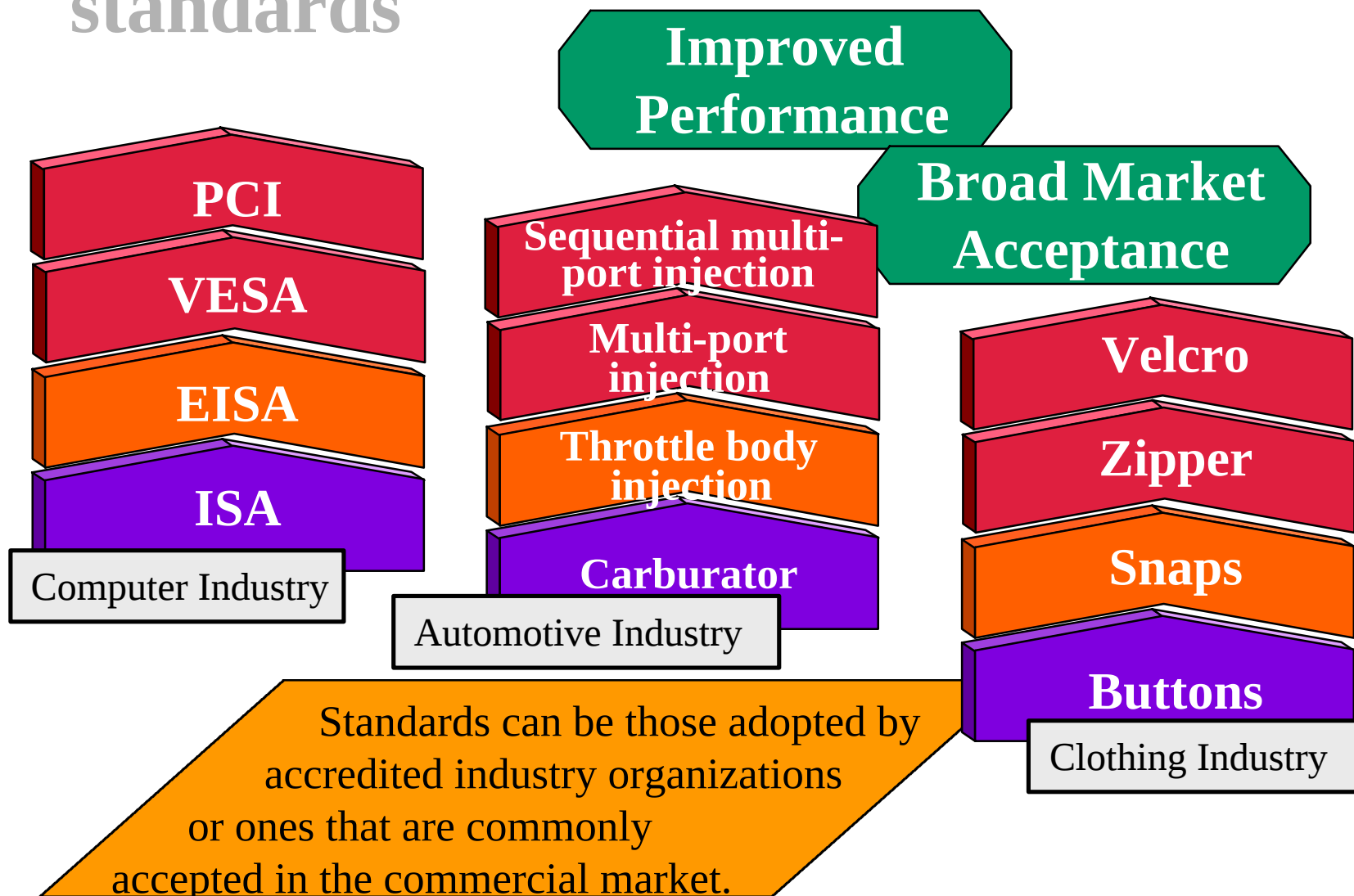
Have well-defined, widely used, preferably nonproprietary interfaces and/or protocols

Use standards to define interfaces

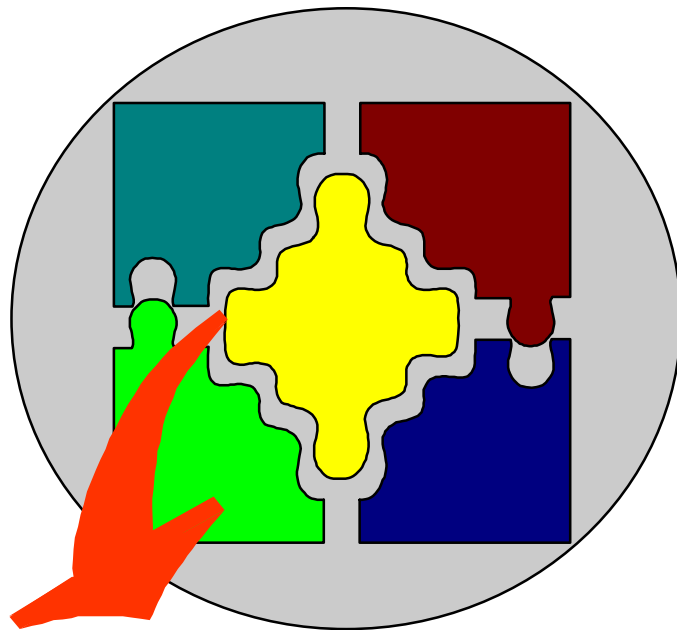
Provide for expansion or upgrade by incorporating or adding new technology

Facilitate improved systems capabilities for a wide range of applications

Open systems use interface standards



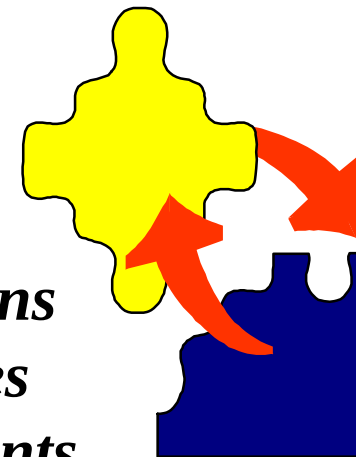
The open systems framework



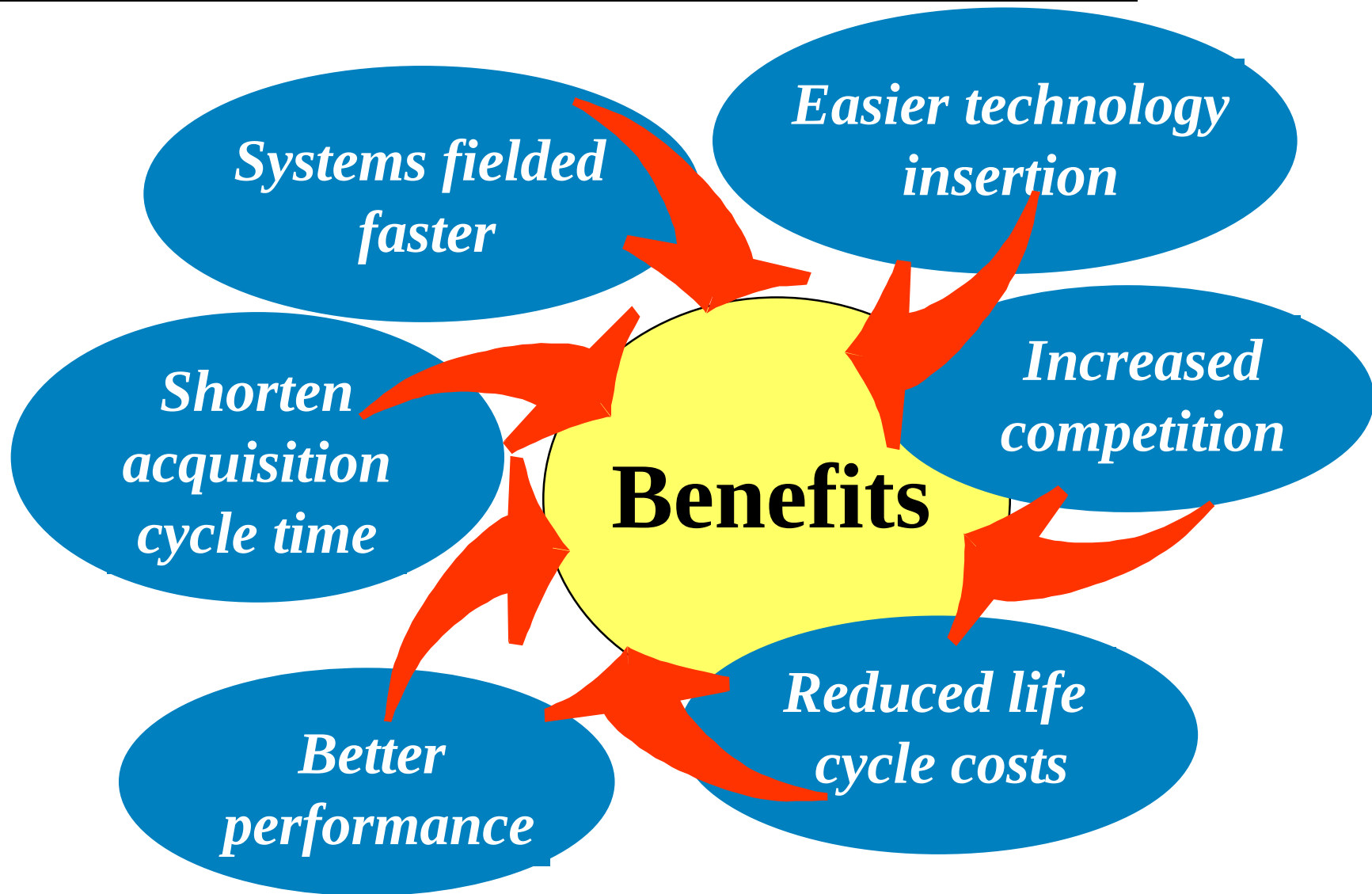
Puzzle pieces are components

The circle represents the weapon system

Performance based specifications spell out interfaces between components using standards to describe form, fit, and function. “How to” is left to the manufacturer.



Benefits of using open systems



Challenges to implementing open systems

- Lack of supplier control
- Lack of technical data
- Ongoing product management
- Ongoing standards management
- Replacement spares risk
- Validation of compliance and/or conformance to standards



Challenges can be overcome!

Successful use of an open systems approach in current weapons acquisitions

Army Intelligence and Electronic Warfare Common Sensor (IEWCS)

IEWCS platforms



“Open Systems Architectures are the only way to go in designing C3I systems. These architectures enable us to leverage commercial technology, to reduce support costs, and to continuously improve our war-fighting systems through product improvement.”

Major General William H. Campbell
Program Executive Officer, US Army

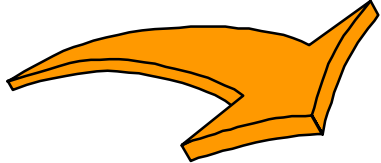
May 31, 1996

IEWCS: the open systems approach applied to a legacy system



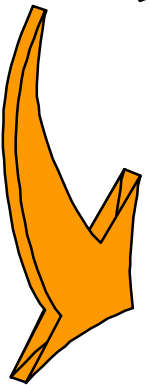
Replaced six legacy systems

- Superior performance
- Seamless upgrades with new technology



Reduced life cycle cost

- \$1,009 million for Army
- \$149 to \$481 million for Marine Corps



Cut development time

- R & D cut by 64%
- Engineering development time by 29%

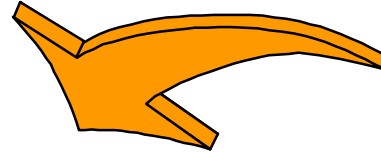
The New Attack Submarine (NASN)

“Open systems facilitates teaming with industry, encouraging the formation of partnerships across the public and private sector bridge. It illustrates the Navy’s firm commitment to open systems as a foundation for all of our weapon systems’ designs and future decisions.”

RADM John F. Shipway, Commander, Naval Undersea Warfare Center



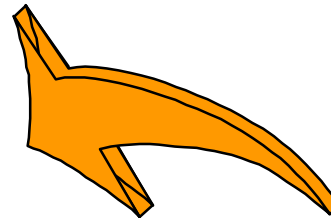
NSSN: using open systems from the beginning



Early industry involvement in developing interface profiles



Used nondevelopmental items and non-government standards



Used OSA to enable “technology refresh windows”

Joint Strike Fighter: providing a force for the future

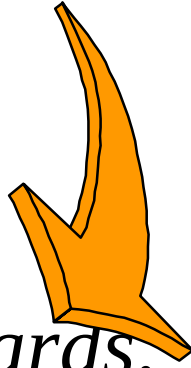
The JSF is the largest military aircraft program ever undertaken which uses an open systems approach throughout. It calls for 3000 aircraft to be supplied to four customers: the US Air Force, US Navy, US Marine Corps and British Royal Navy.



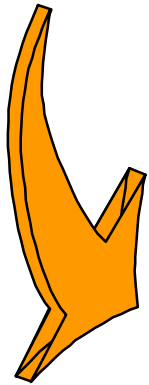
The success of the JSF relies heavily on using an open systems approach



Common production line for multiple configurations to lower cost

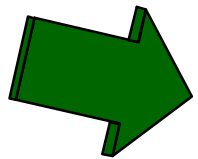


Extensive use of non-government standards, interfaces and processes in many of the C3I electrical and mechanical components

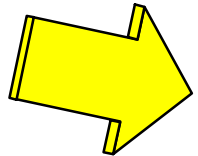


Uses commercial technology and leverages multiple DoD legacy programs

Some ways to get started...

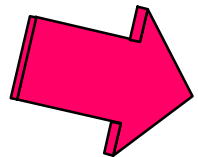


Designate an open systems

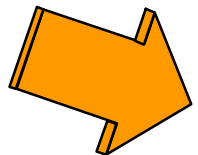


“champion” in your organization

Start a pilot project and learn as
you go



Initiate horizontal technology
integration (e.g. power supply)



Take advantage of products and
services available from OS-JTF

The DoD vision of open systems

The DoD Vision

DoD uses open systems to leverage commercial products and practices in order to field superior warfighting capability more quickly and more affordably.

Mission of the Open Systems Joint Task Force

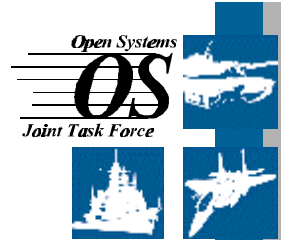
Champion the establishment of an open systems approach (OSA) as the preferred technical approach and business strategy for the acquisition of all weapons systems electronics. Specifically, the OS-JTF will:

- ➡ Make OSA an integral part of the acquisition process,
- ➡ Provide assistance in implementing OS,
- ➡ Promote acceptance of OS.

And, much more!



How to contact OS-JTF



**On the Worldwide Web at:
<http://www.acq.osd.mil/osjtf>**

By E-Mail: osjtf@acq.osd.mil

Phone: (703) 578-6141

FAX: (703) 575-0534

Thank you.