

Headquarters U.S. Air Force

Integrity - Service - Excellence

Why The Air Force Needs Binary XML



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Net-Centric Warfare

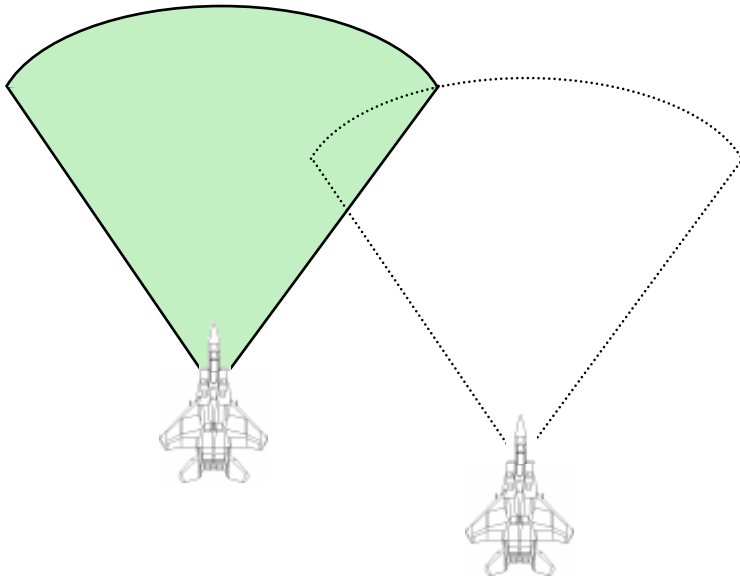
- Seamless interoperability between the warfighting elements
- Permits sharing of
 - Information
 - Situational awareness
 - Commander's intent
- Leading to
 - Speed of command
 - Self-synchronization
 - Enemy lock-out
- Resulting in: **increased combat power**



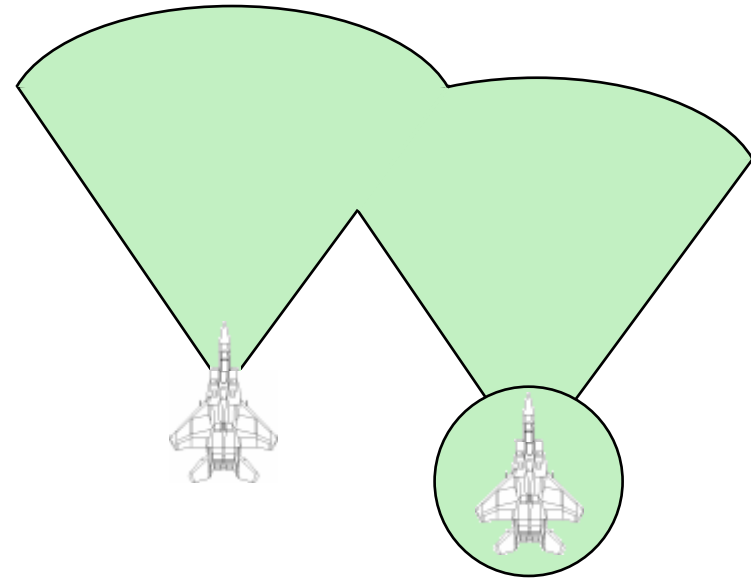


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Air-To-Air Combat Example: Value of Tactical Data Links



Voice only

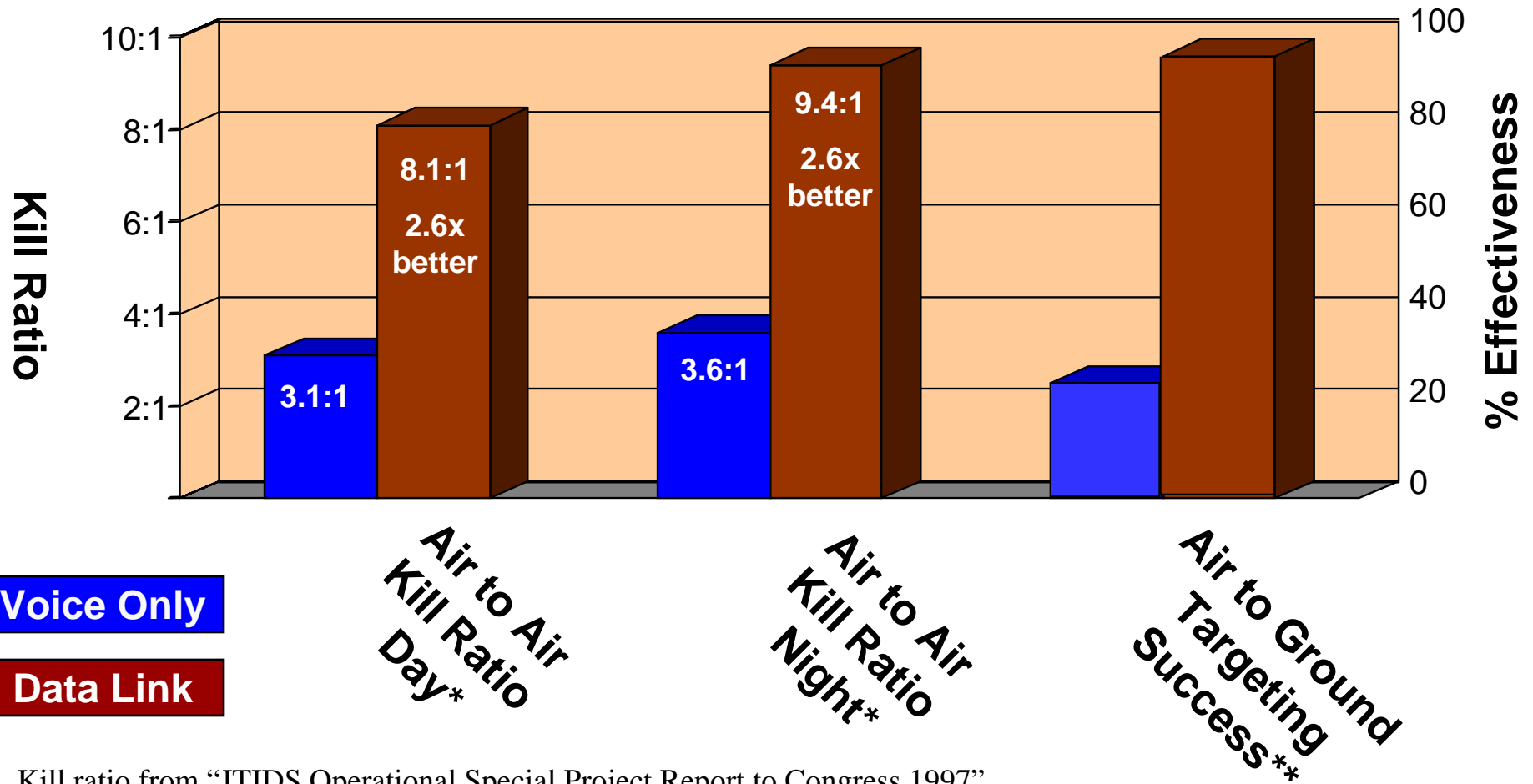


Voice plus data link



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Tactical Data Links Increase Air Combat Effectiveness



Voice Only

Data Link

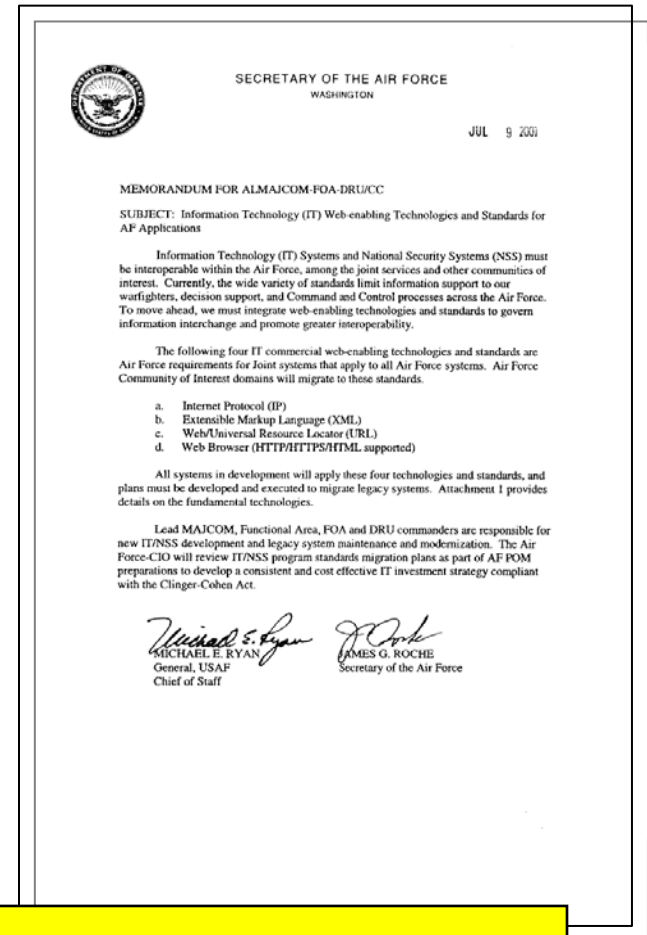
* Kill ratio from "JTIDS Operational Special Project Report to Congress 1997"
**Targeting data from JEFX 2000 report



Web-Enabling the Air Force

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- All systems will migrate to:
 - Internet Protocol (IP)
 - Extensible Markup Language (XML)
 - Universal Resource Locator (URL)
 - Web browser (HTTP / HTML)
- Many programs are moving to Service-Oriented Architecture using Web Services

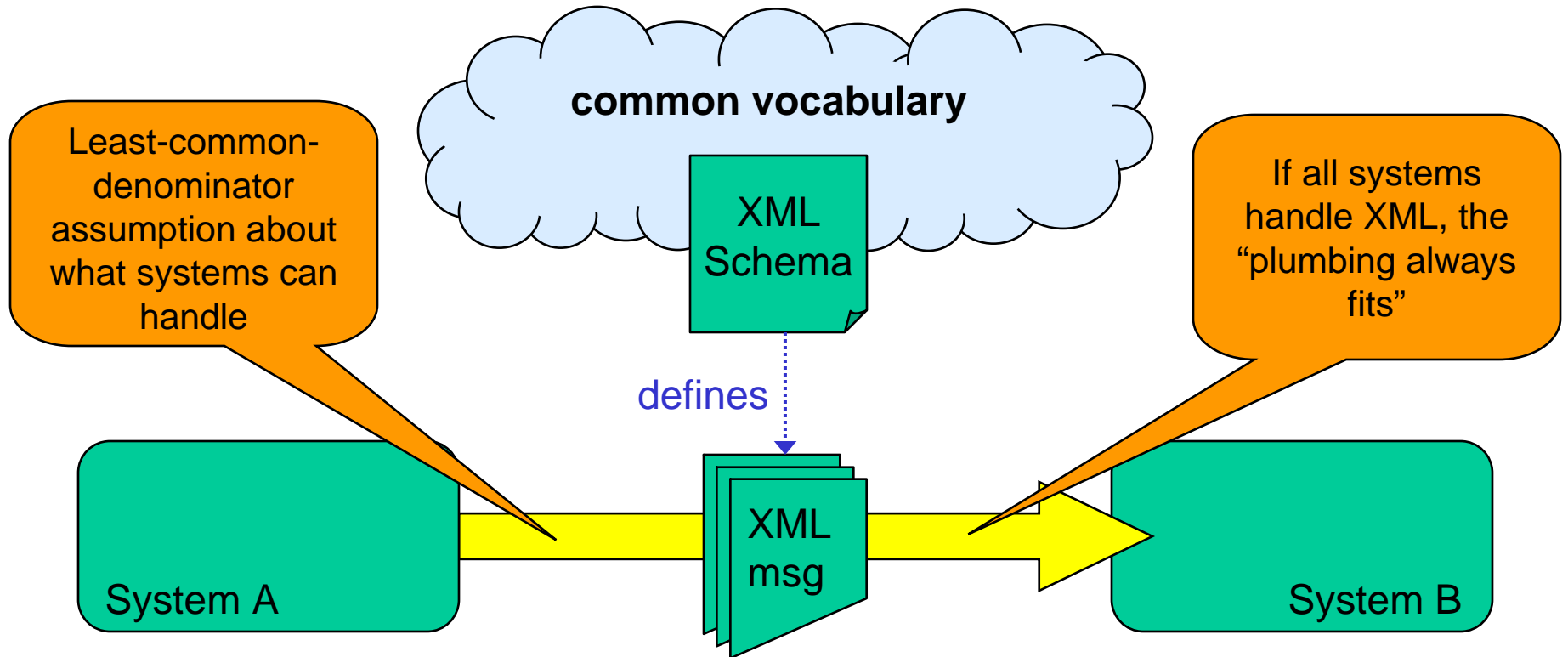


Moving toward seamless interoperability for NCW



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XML-Based Data Exchange: Loosely-Coupled Systems

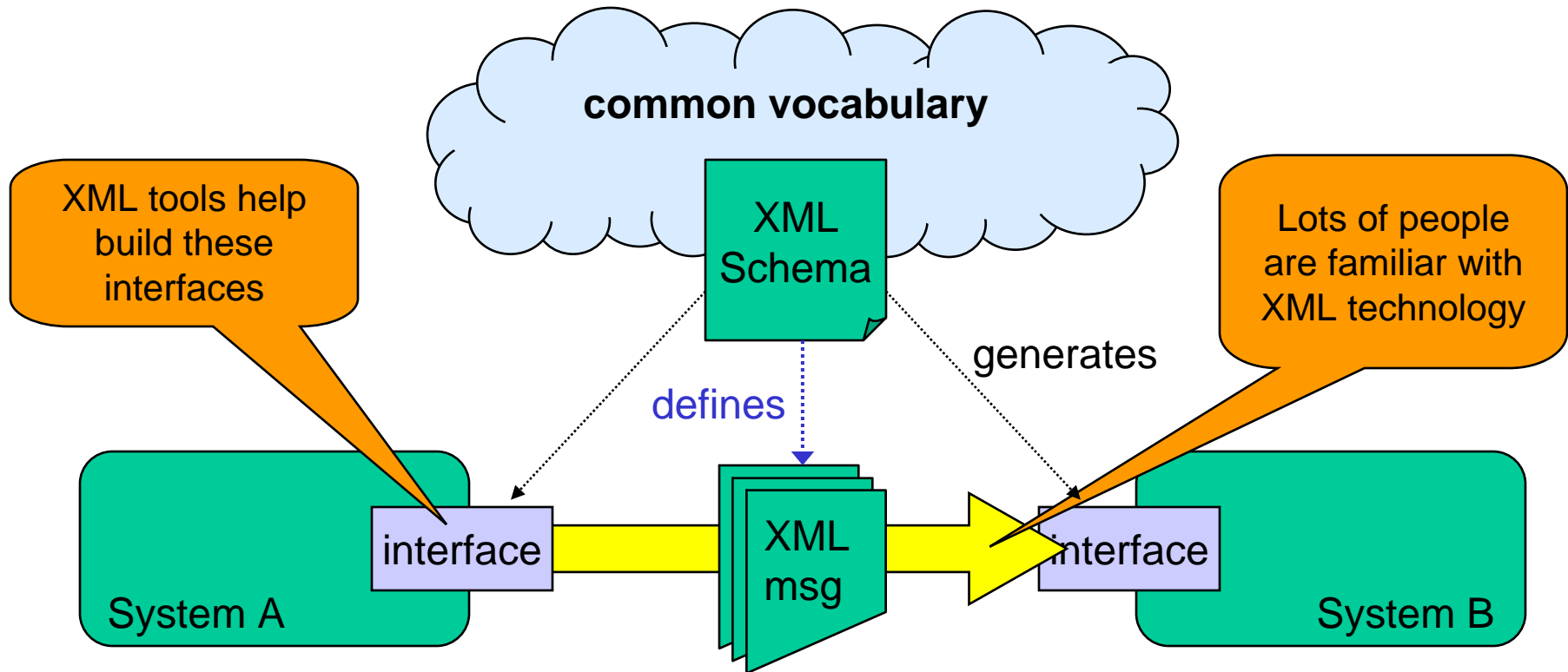


Using XML eliminates one sort of "seam" between systems



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XML-Based Data Exchange: Tools and Training

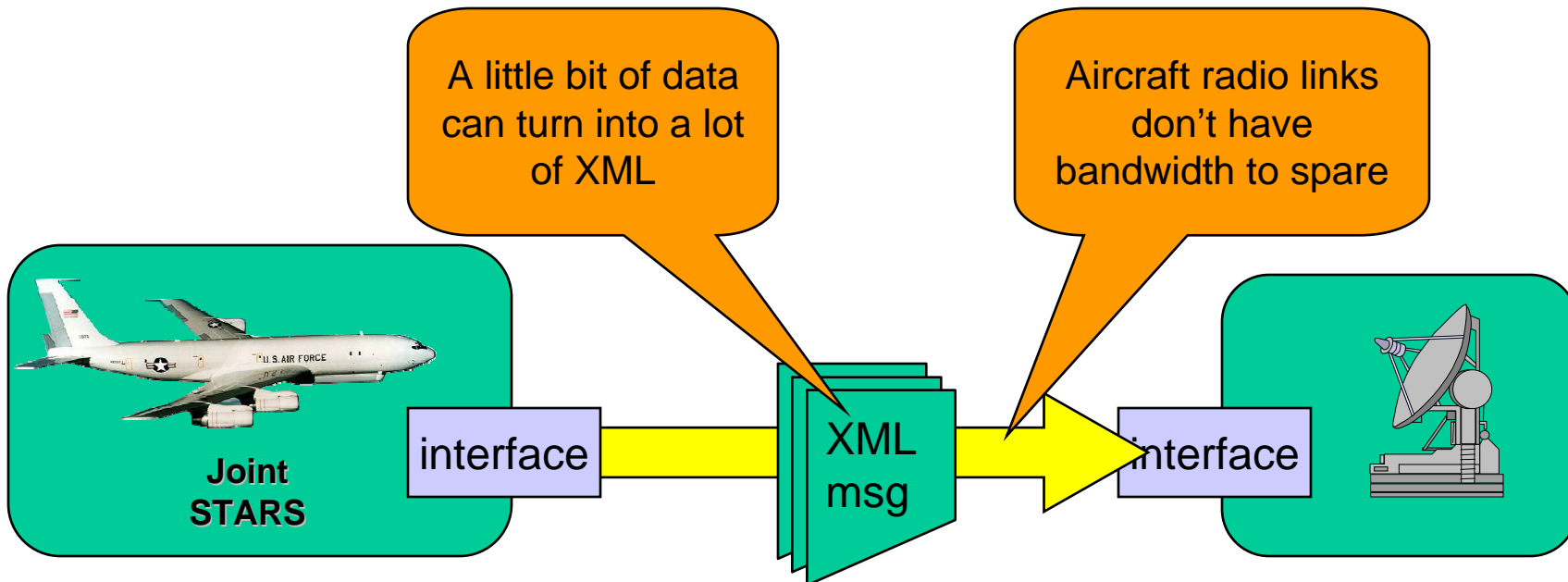


XML interfaces are easier to build than the alternatives



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Limited-Bandwidth Environments

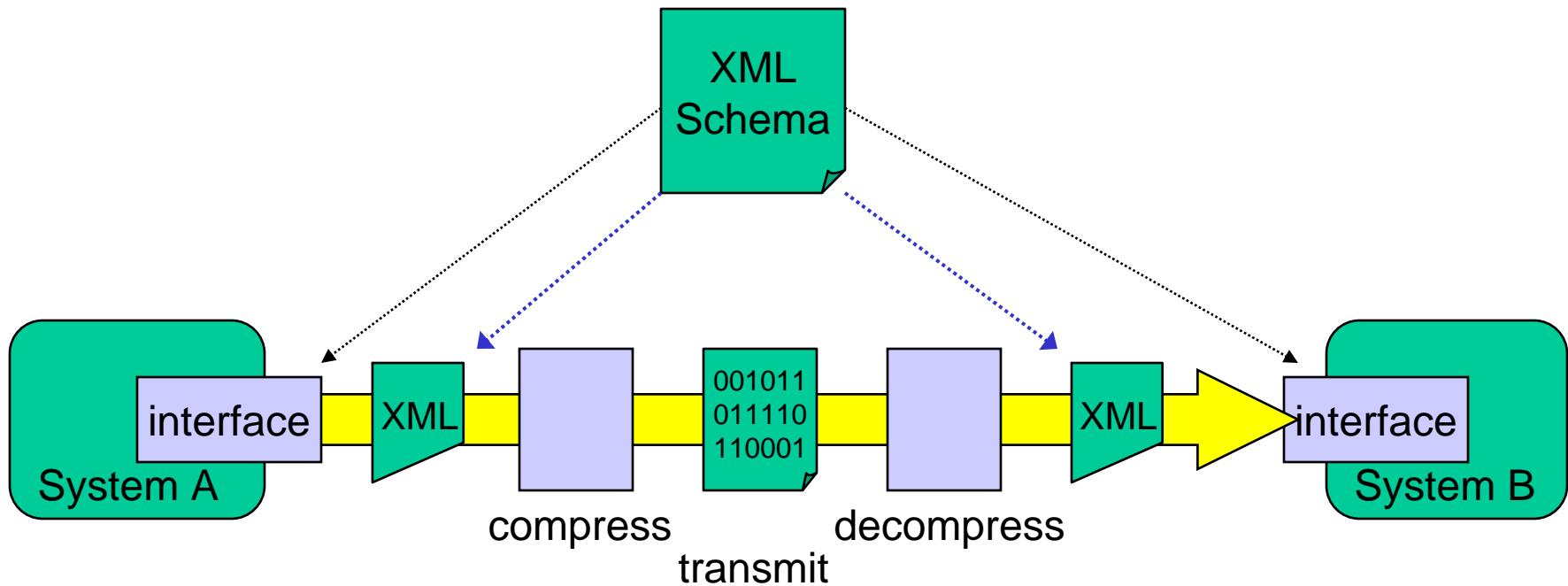


We can't always afford the overhead of XML syntax



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Binary / Compressed XML

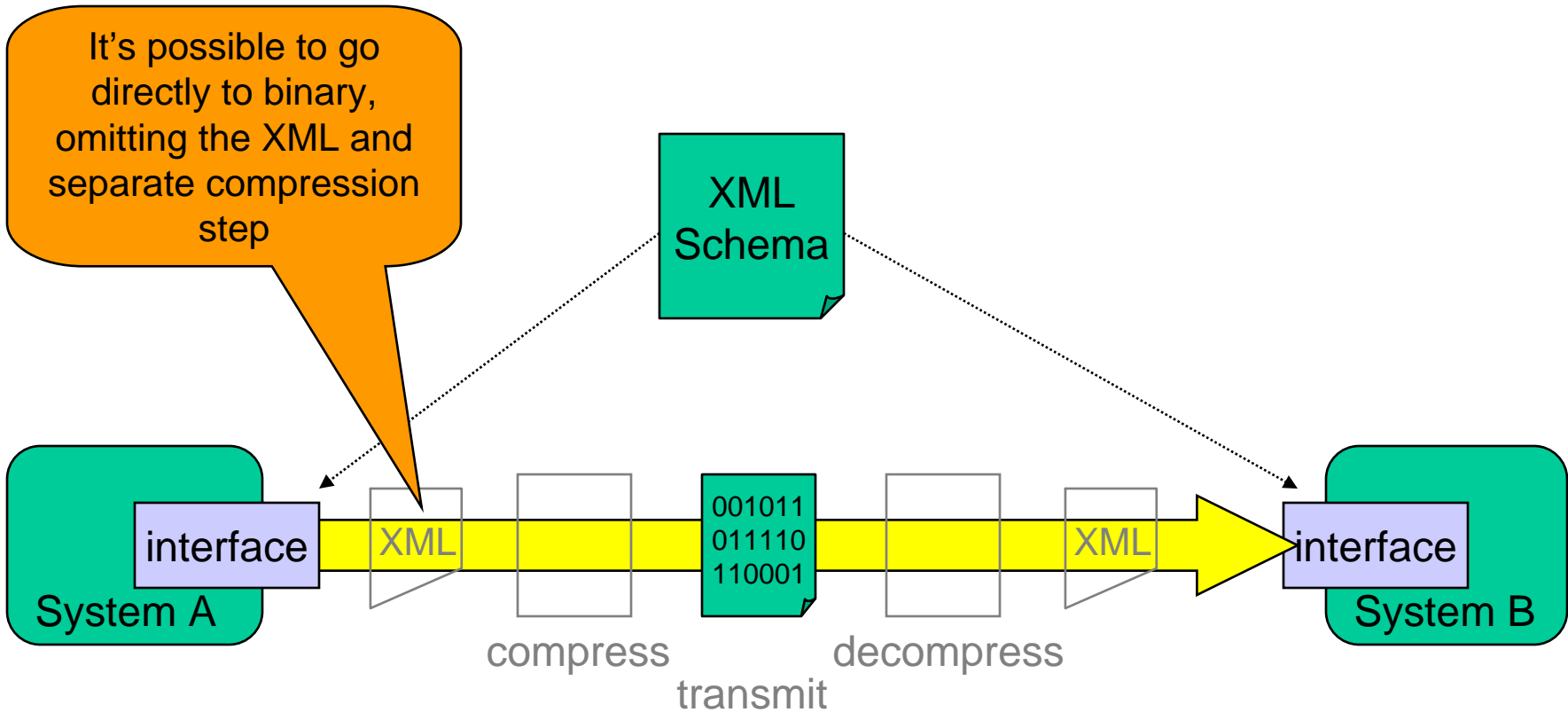


We can have bandwidth efficiency *and* advantages of XML



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Binary / Compressed XML



We can have bandwidth efficiency *and* advantages of XML



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AF Requirements for Binary XML

- **Primary requirements and assumptions:**
 - **Message size is the most important concern**
 - **System limitations can also be important (CPU power, battery life, etc.)**
 - **Sender and receiver know the XML schema in advance**
 - **Many messages are short**

We need a binary XML that works in this environment.
This kind of binary XML is technically feasible.
Our systems will be using it.



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Wanted: A Binary XML Standard

- **We don't want to use one of many binary XMLs**
- **We don't want to develop our own binary XML tools**
- **We want a single binary XML standard**
 - **One which satisfies our key requirements**
 - **One with widespread commercial support**

Binary XML is part of our plan to be Net-Centric.
Help create the Binary XML standard we need.