

ETSI B2B Workshop, July 2008, Sophia Antipolis

Profiling of Standards – A Necessary Step toward Interoperability

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FACTS about Standards:

- Many optional features (“tool box” design)
- Unspecified areas, unspecified feature combinations or “corner cases”.
- *Variability* (Deprecated features, Extensibility...)
- Require binding / integrating with other standards.
- Require adaptation to user’s business-specific standards, environment and practices.
- **Interoperability requires taking a position on all of the above.**

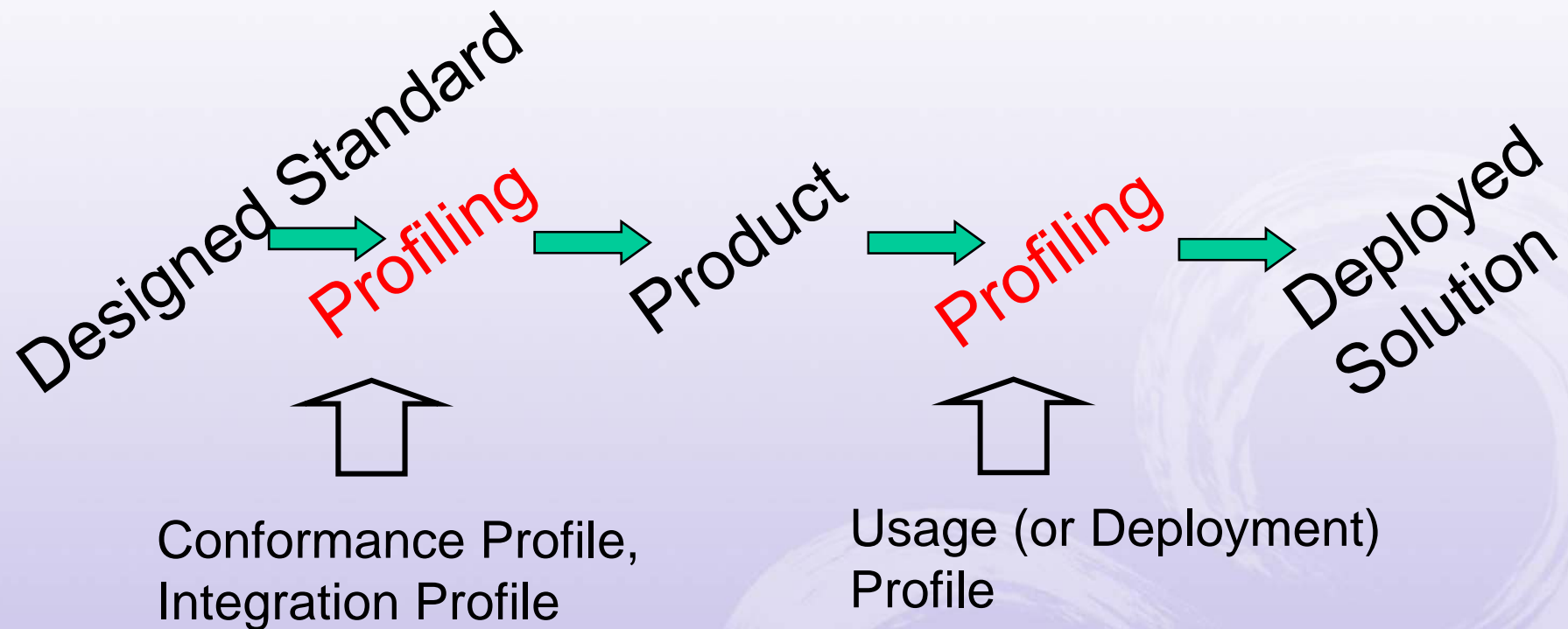
Challenge:

The conventional deployment process used for software (design → in-production) is not sufficient to obtain Interoperable Standard-based Solutions



Solution:

Add *Profiling* to this Process



Three types of Profiles for Standards

- [Standard] Deployment profiles:

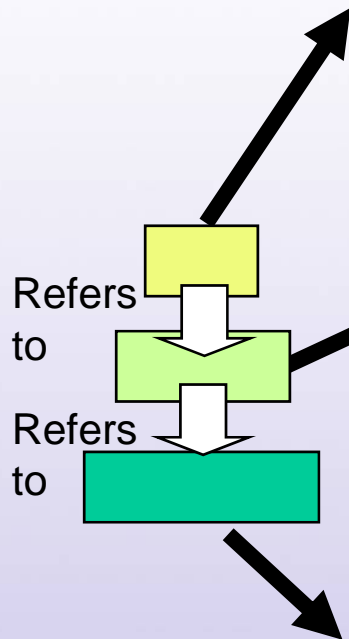
how to use a (set of) standard(s) with my business partners

- [Standard] Conformance Profiles:

different ways a product can conform to a standard

- [Standard] Integration Profiles:

how several standards can be combined and work together



Conformance Profiles:

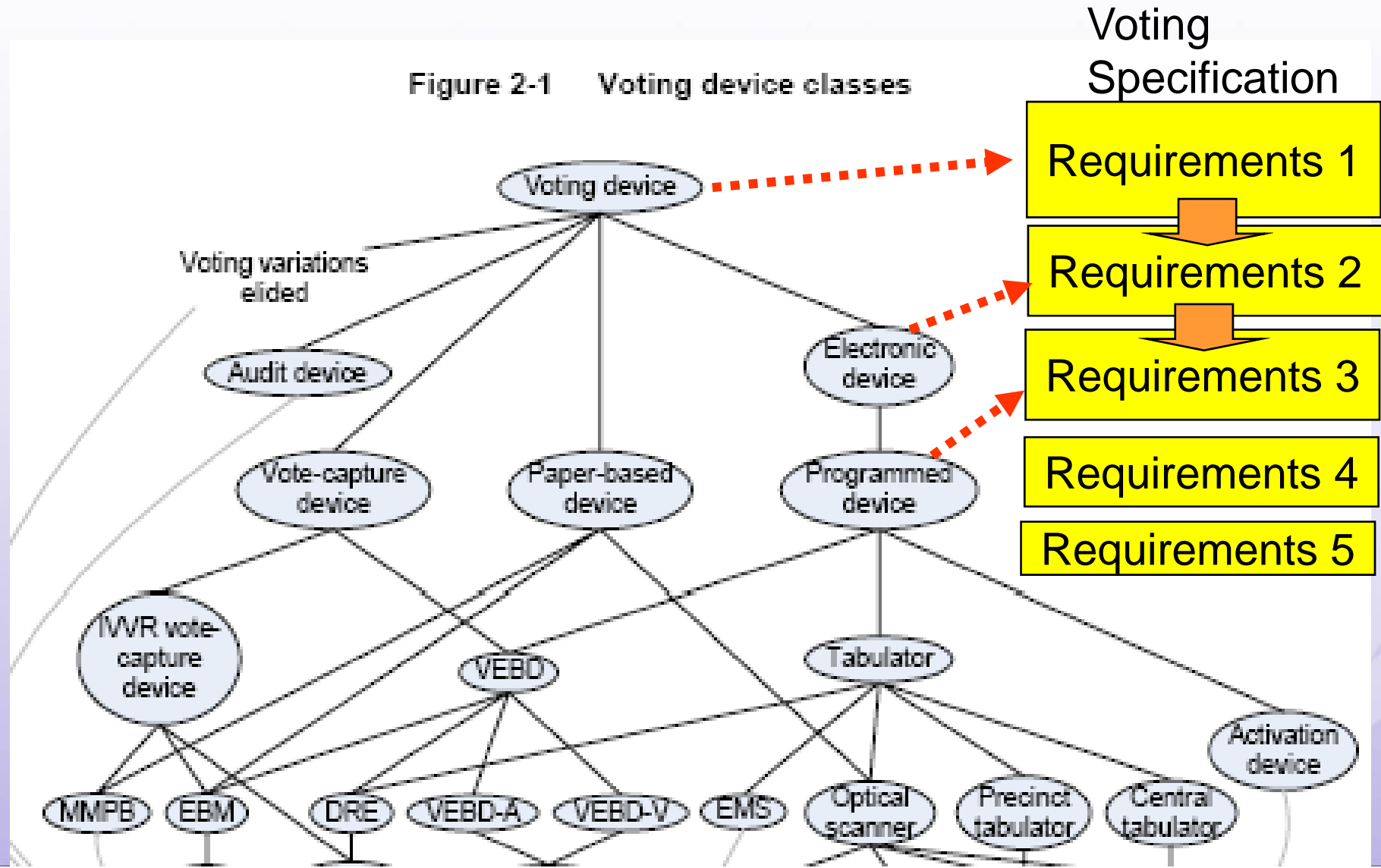
what: *different ways a product can conform to a standard*

who: *ICT product vendors OR User Communities & Consortia*

- Conformance Profiles & Clauses (see W3C QA)
- Conformance Profile = class of Product
E.g. “voting systems requirements” spec.
- ebMS V3:
Standard doc + Conformance Profiles doc

Within Voting Systems Requirements spec (from Election Assistance Commission):
 Conformance Profile → Class of Products

Figure 2-1 Voting device classes



Integration Profiles:

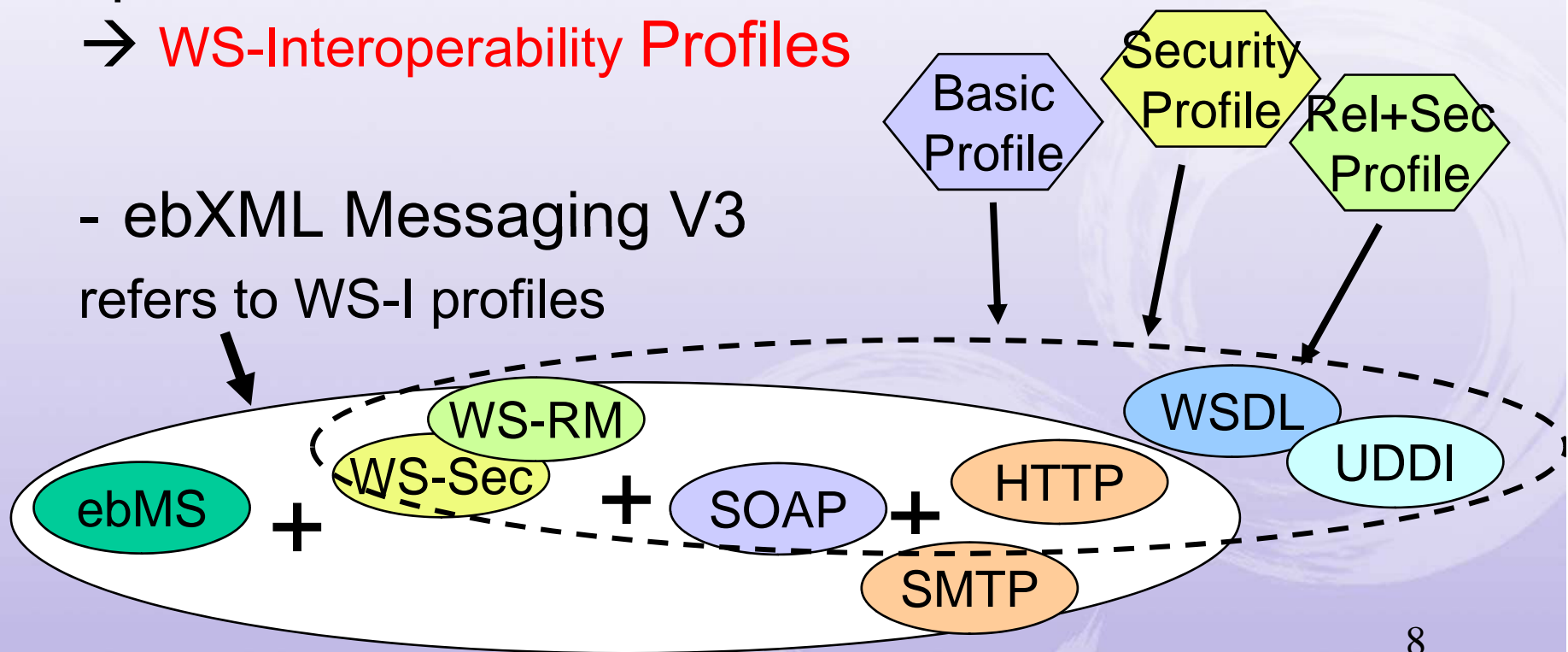
what: *how several standards can be combined and work together*

who: *ICT product vendors*

- Several complementary Web Services specifications

→ **WS-Interoperability Profiles**

- ebXML Messaging V3 refers to WS-I profiles



WS-Interoperability Profiles

- ▶ SOAP 1.1
- ▶ WSDL 1.1
- ▶ UDDI 2.0
- ▶ XML Schema
- ▶ XML 1.0 (Second Edition)
- ▶ HTTP 1.1
- ▶ SSL 3.0

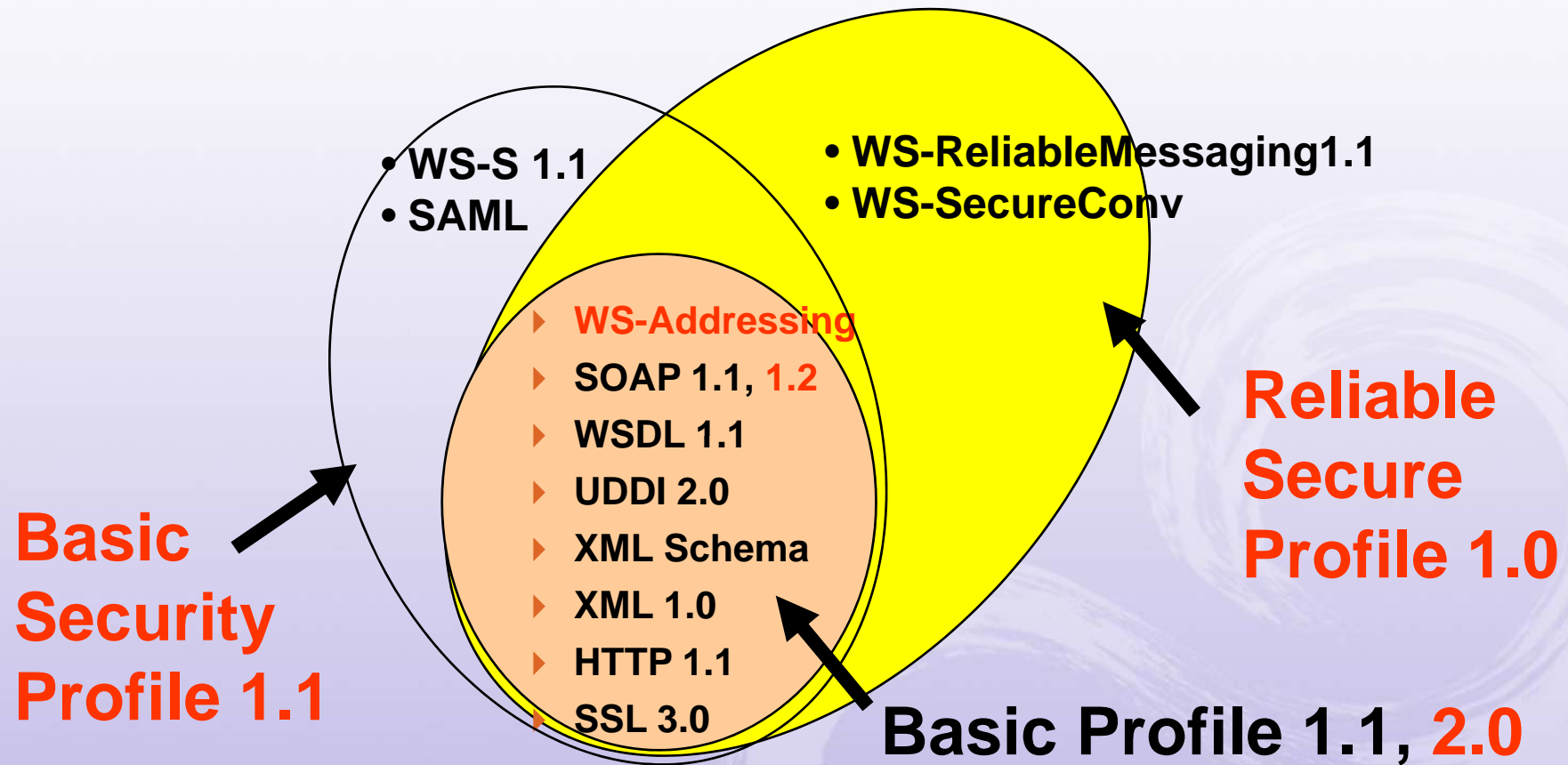
+ {
• Restrictions,
• Integration Guidance
• Best Practices

=

**Basic
Profile 1.1**

More than 200 interoperability issues resolved

WS-Interoperability Profiles

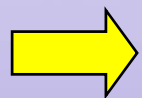


Deployment Profiles:

what: *how to use a (set of) standard(s) with my business partners*

who: *User Communities & Consortia*

- Global Justice Reference Architecture (DoJ) “Service Interaction Profile(s)”(for WS, ebXML)
- RosettaNet Multiple Messaging Services Profiles (AS2, ebMS2/3, WS)
- HL7: ebMS V3 profile
- Center for Disease Control profile (ebMS2, CPPA)



Use of Profile **Templates**: ebXML IIC.

ebXML IIC Templates for Deployment Profiles



Deployment Profile Template v1.1

For OASIS ebXML Message Service 2.0 Standard

Committee Draft. 20 June 2005



Deployment Profile Template v0.95

For OASIS ebXML ebBP v2.0.3 OASIS Standard
Committee Draft, 22 June 2006



Deployment Profile Template v1.1

For OASIS ebXML Collaboration-Protocol Profile and
Agreement (CPP/A) 2.0 Standard

Committee Draft, 31 October 2005

Using a Deployment Profile Template

→ Avoid “forgetting” Variability factors, & makes it easier to compare Profiles !

(a) Options: lists all the possible options in the original standard, that users need to decide about.

(b) Industry-specific Use: Lists Features of the Standard that will be subject to further rules of use (format conventions, bindings to industry standards,...)

(c) Extensions: (something that wasn't supported in the base standard, but can be defined as an extension)

(d) Operational aspects: management and governance (deployment process, configuration details, who maintains the records, specific limits...)

A B2B Stack: Composition of Standards in Different Functional Areas

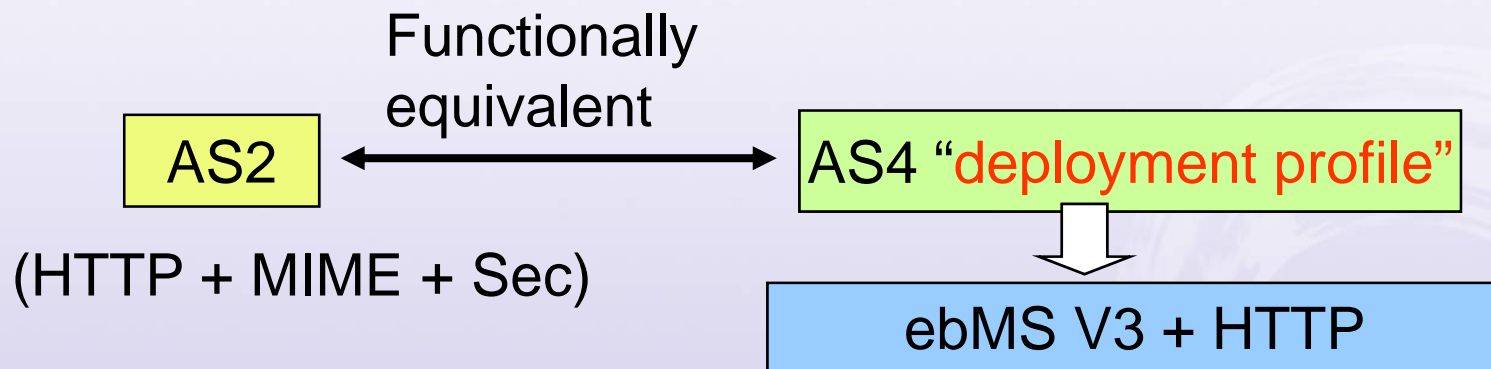
- Business Content / Taxonomies
- Collaboration / Process
- Messaging
- Agreements / Policies
- Repository / Directory
- Integration (interfaces / adapters)

Typically requires all 3 types of Profiling

Profiling: a path to standard convergence !

- Emulating the functionality of a standard using another standard:

$$AS4 = (AS2 + ebMS3)$$



- leveraging new standards for creating the next version of a standard:

→ define a deployment profile for ebMS3, itself using an integration profile of WS standards (WS-I)

What if too many Profiles?

- The closer a Standard to the Application layer, the more options.
 - a single Profile does not fit all:
 - it is unavoidable that each user community will define their own profiles.
- But it is easier to merge or evolve two profiles to reach interoperability, than to merge two standards

Conclusion

- For Standards like for any complex product, customization and adaptation to Business use is expected → **a risk for broader Interoperability !**
- **Profiles** mitigate that risk - They give a name to each variant of use of a standard.
- Profiles are the way for **Users** to control the use of a Standard, and to influence this Standard.

Useful Links

- Variability in specifications (W3C):

<http://www.w3.org/TR/spec-variability/>

- (W3C) Conformance Clauses / Profiles:

<http://www.w3.org/TR/qaframe-spec/>

- WS-I Integration Profiles: <http://www.ws-i.org/>

- eXML IIC Deployment Profile Templates:

http://www.oasis-open.org/committees/document.php?document_id=21667&wg_abbrev=ebxml-iic

- Conformance Classes (Voting Requets, EAC):

<http://www.eac.gov/files/vvsg/Final-TGDC-VVSG-08312007.pdf>

- ebXML Messaging V3 Conformance Profiles:

http://www.oasis-open.org/committees/download.php/24170/ebms3_ConformanceProfiles-08.pdf

- HL7 Deployment Profile:

<http://www.hl7.org/v3ballot2007sep/html/infrastructure/transport/transport-ebxml.htm>

- Justice Ref. Architecture (DoJ): Service Interaction Profiles:

http://it.ojp.gov/topic.jsp?topic_id=242