Web Services and Services on the Web

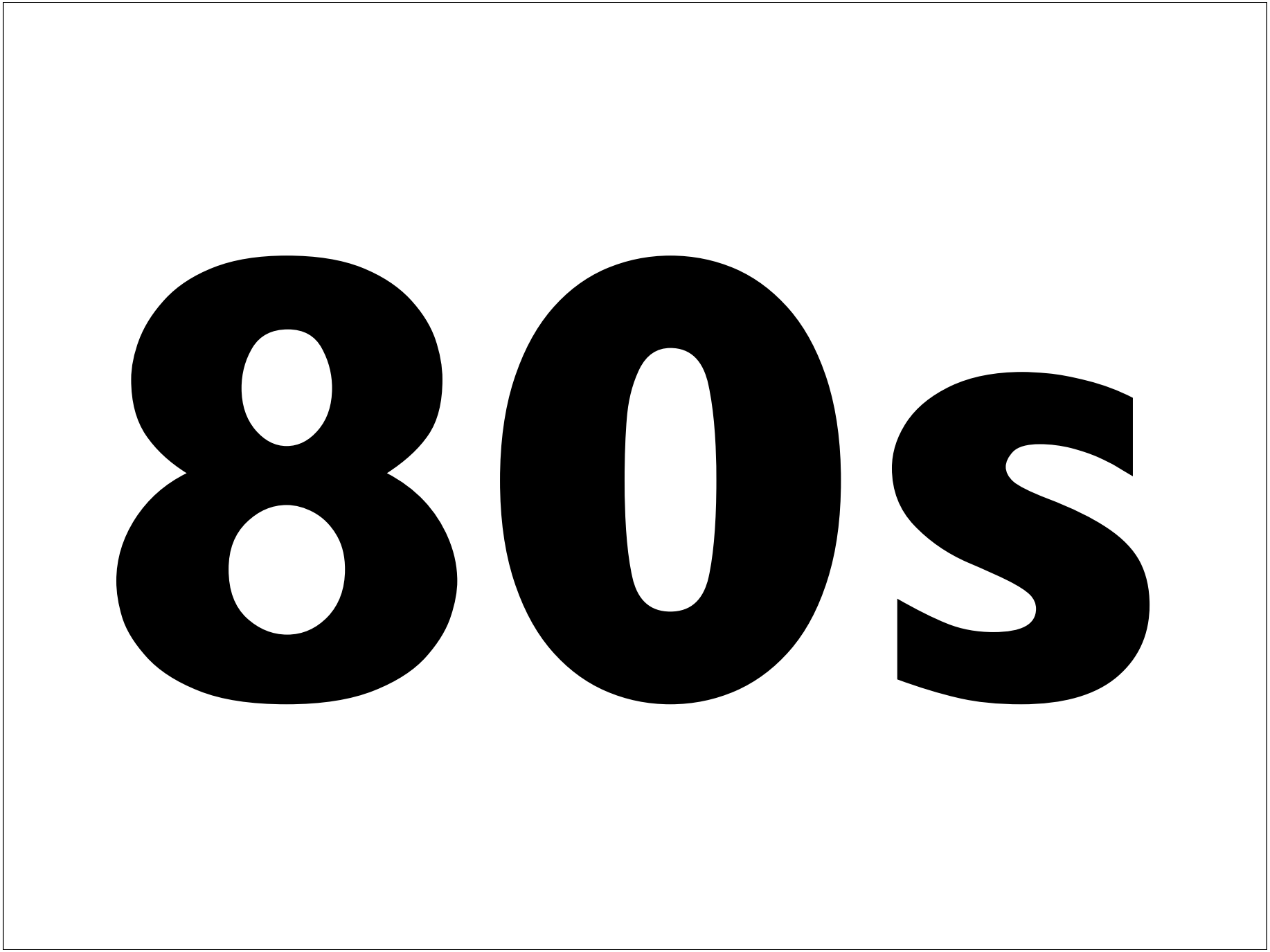
Paul Downey BT

W3C Workshop on the Web of Services for Enterprise Computing

27-28th February 2007

21-MAY
2006
WHERE'S
PAUL?

w3c Enterprise Computing


80s

telcoms

ICT

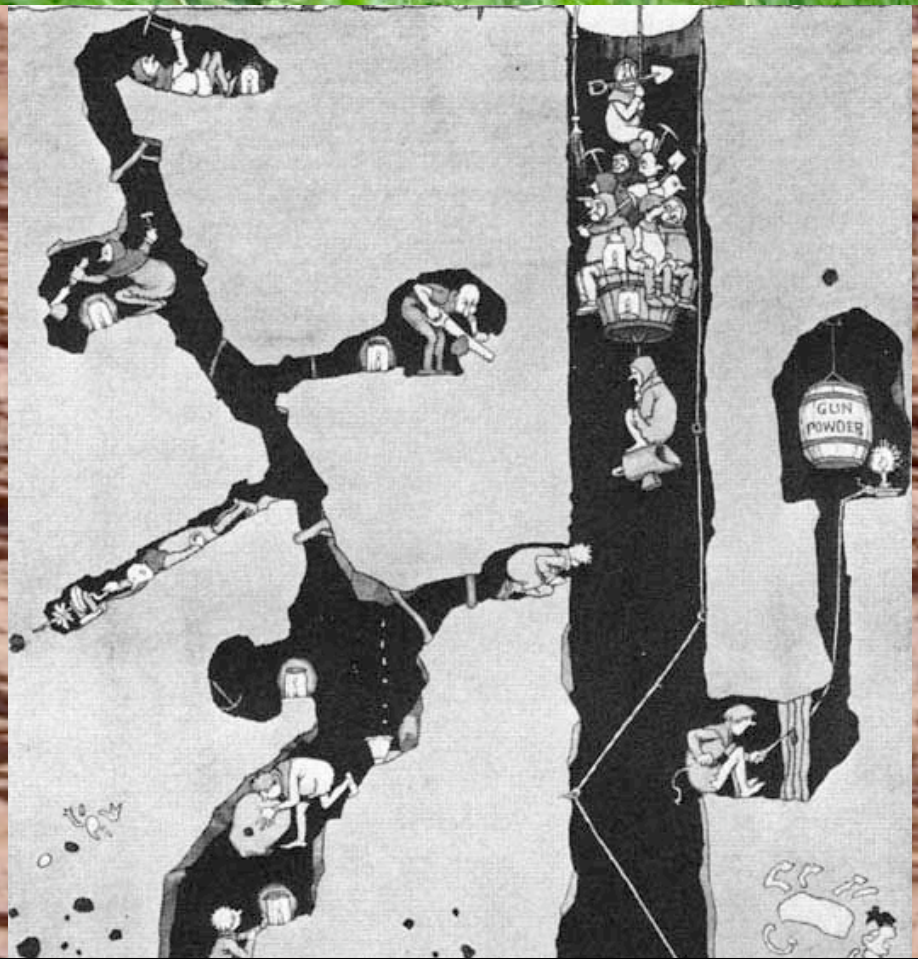
913910

EoI

federation mobile
outsourcing open
ubiquitous web
deperimiterisation
presence personas
virtualisation agile
offshoring identity

BT
openreach
a BT Group business
BT
openreach
BT
VAUXHALL
FH55 VAV

Capabilities



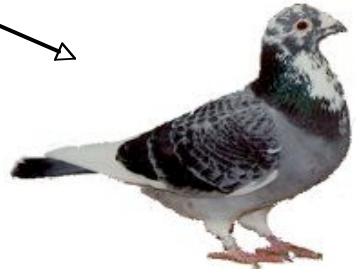
Standards

Web Services

Services on the Web

Web services

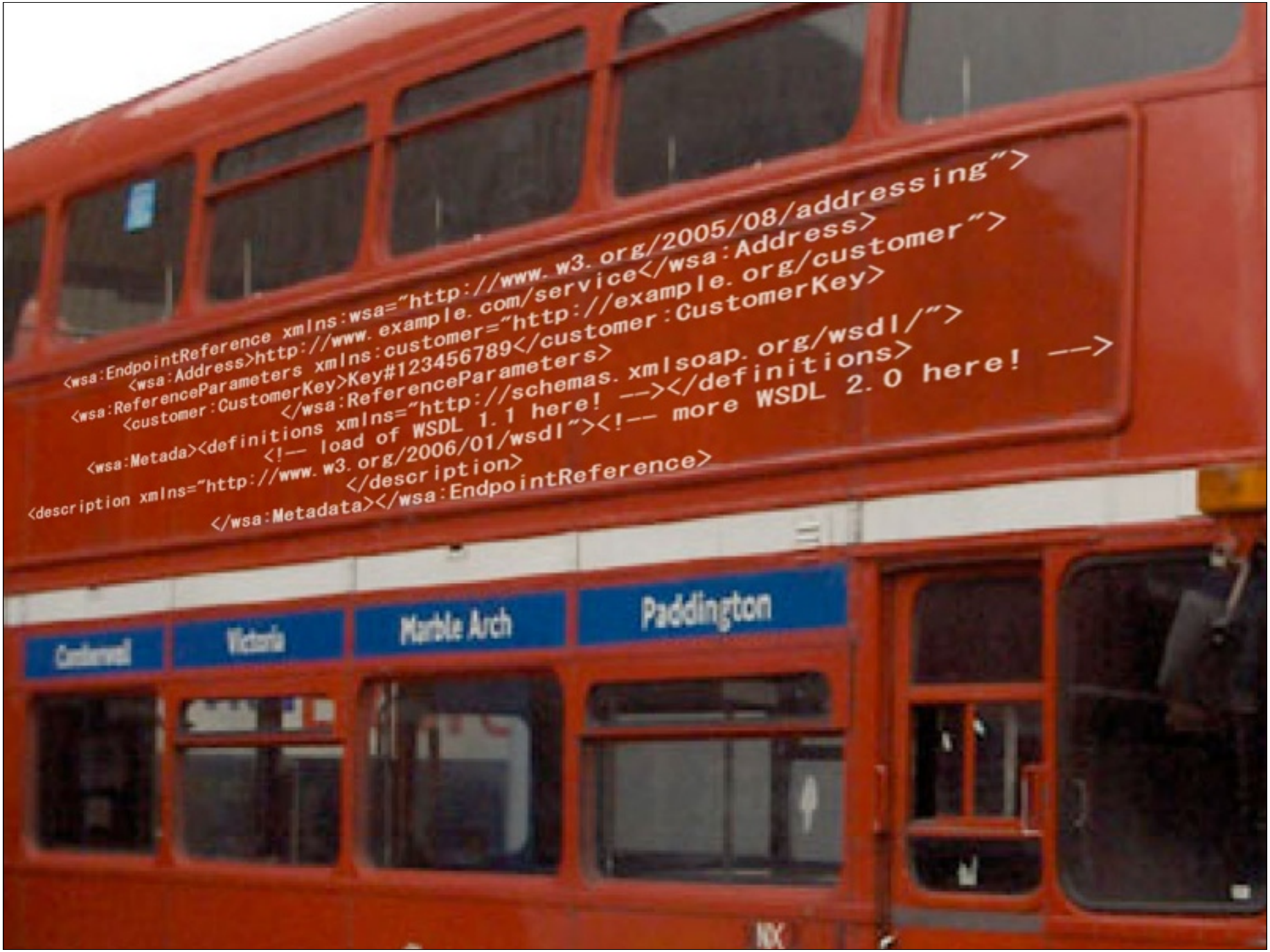
Messages



SPEAKMAN®
WWW.SPEAKMANCOMPANY.COM
ANYSTREAM® 2000
1 - 800 - 537 - 2107

Anonymous URIs

mailto:services@example.com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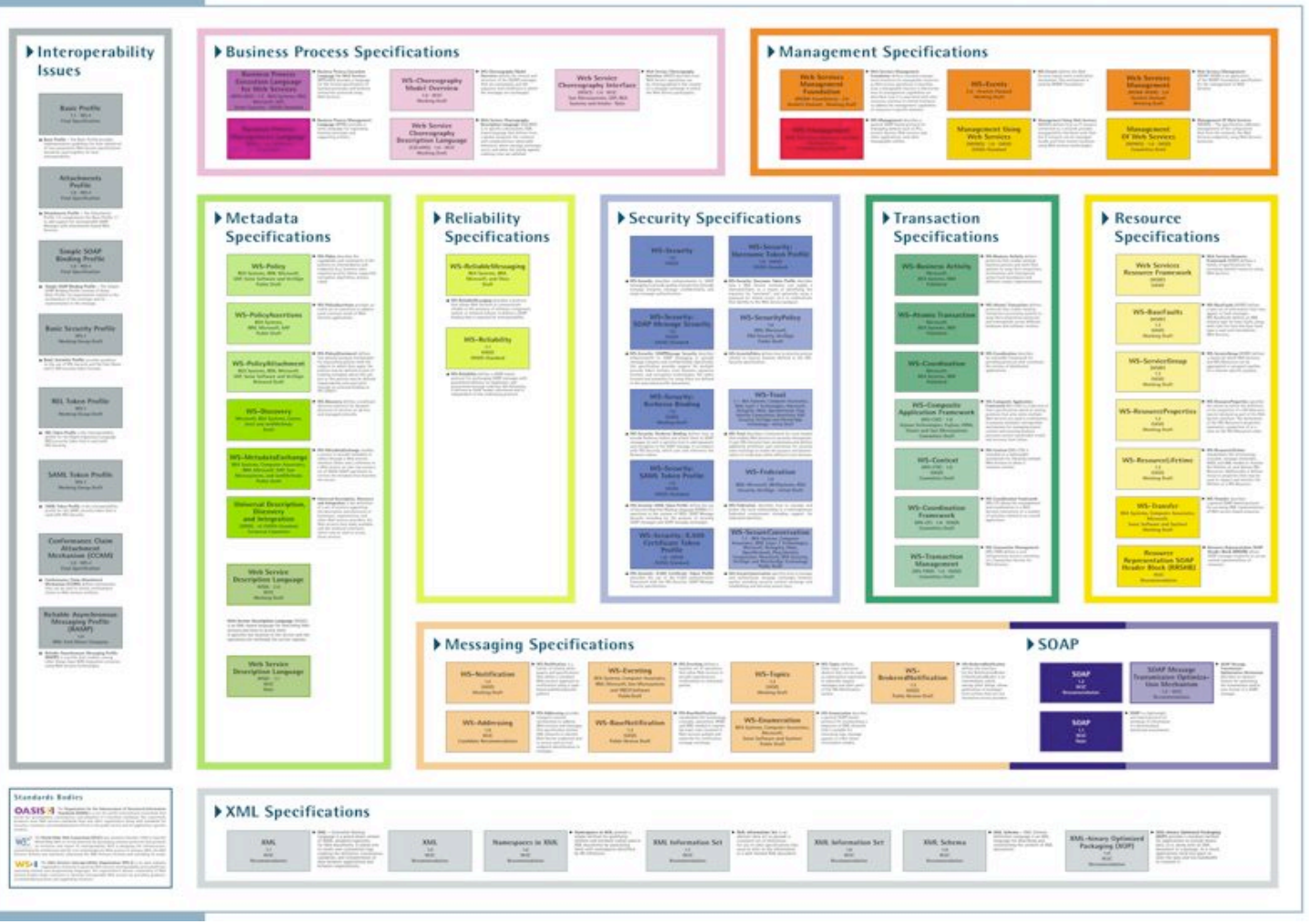
<wsa:Address>http://www.example.com/service</wsa:Address>
<wsa:ReferenceParameters xmlns:customer="http://example.org/customer">
<customer:CustomerKey>Key#123456789</customer:CustomerKey>
</wsa:ReferenceParameters>
<wsa:Metada><definitions xmlns="http://schemas.xmlsoap.org/wsdl/">
<description xmlns="http://www.w3.org/2006/01/wsdl"><!-- more WSDL 2.0 here! -->
<!-- load of WSDL 1.1 here! --></definitions>
</description>
</wsa:Metadata></wsa:EndpointReference>
Camberwell
Victoria
Marble Arch
Paddington

Forget OSI

Web Services Standards



Version 2.0 · September 2005

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D-40880 Ratingen
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info@innoq.com · www.innoq.com

innoQ Schweiz GmbH
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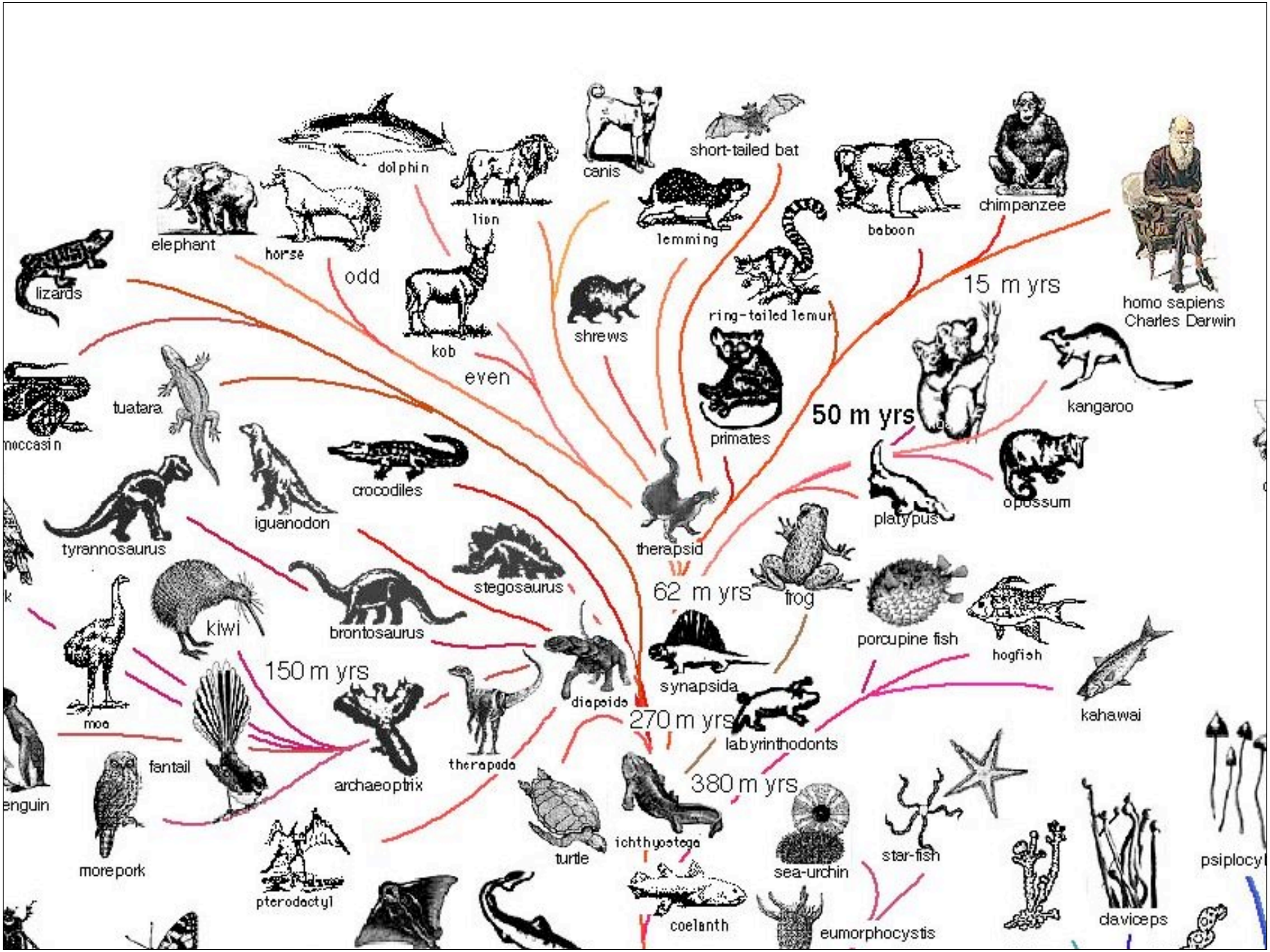
CH-6330 Cham
Telefon +41 (0) 41 - 743 01 11
Telefax +41 (0) 41 - 743 01 19


dolphin
canis
short-tailed bat
chimpanzee
lion
lemming
baboon
elephant
horse
lizards
odd
kob
shrews
ring-tailed lemur
homo sapiens
Charles Darwin
15 m yrs
even
primates
50 m yrs
kangaroo
tuatara
moccasin
crocodiles
iguanodon
tyrannosaurus
therapsid
platypus
opossum
stegosaurus
62 m yrs
frog
porcupine fish
hogfish
kiwi
brontosaurus
synapsida
kahawai
150 m yrs
diapsida
270 m yrs
labyrinthodonts
moa
fantail
archaeoptrix
therapoda
penguin
380 m yrs
ichthyostega
turtle
star-fish
sea-urchin
morepork
pterodactyl
coelanth
eumorphocystis
daviceps

XMLFramework
Training
Professional Services
implementation and integration
XML e-Content Software
Arbortext
XML e-Content Software
Arbortext
Convert
Word, Excel
Publish
Web, Print, CD
Create
XML, SGML

Welcome to Header Hell

```
<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/" xmlns:ns1="http://sdk.bt.com/2007/01/WhiteLabelAuthentication"
xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing" xmlns:wsse="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd" xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd" xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
   <SOAP-ENV:Header>
      <wsse:Security>
         <ds:Signature>
            <ds:SignedInfo>
               <ds:CanonicalizationMethod Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
               <ds:SignatureMethod Algorithm="http://www.w3.org/2000/09/xmldsig#rsa-sha1"/>
               <ds:Reference URI="#ac016ffe-a6e9-23d4-ebd1-ccef7ea31db7">
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                     <ds:Transform Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
                  </ds:Transforms>
                  <ds:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldsig#sha1"/>
                  <ds:DigestValue>kyBw9fnMjhi2I39+wfBIklyk8g4=</ds:DigestValue>
               </ds:Reference>
               <ds:Reference URI="#78223460-ef68-5501-83d6-a5edb6d452b6">
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                  </ds:Transforms>
                  <ds:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldsig#sha1"/>
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               </ds:Reference>
            </ds:SignedInfo>
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GHvEvAHZ4B6N6gSaX7NcGFrYnsYKP0nX5vT7jBh7WZ7Euqn0PyjCHyYxbU=</ds:SignatureValue>
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               <wsse:SecurityTokenReference>
                  <wsse:Reference URI="#CERTID"/>
               </wsse:SecurityTokenReference>
            </ds:KeyInfo>
         </ds:Signature>
         <wsu:Timestamp wsu:Id="ac016ffe-a6e9-23d4-ebd1-ccef7ea31db7">
            <wsu:Created>2007-02-23T07:47:01Z</wsu:Created>
            <wsu:Expires>2007-02-23T08:47:01Z</wsu:Expires>
         </wsu:Timestamp>
         <wsse:BinarySecurityToken EncodingType="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-soap-message-security-1.0#Base64Binary"
ValueType="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-x509-token-profile-1.0#X509v3"
wsu:Id="CERTID">MIICdzCCAeCgAwIBAgICAX0wDQYJKoZIhvcNAQEEBQAwezEnMCUGA1UEChMeQnJpdGlzaCBUZWxlY29tbXVuaWNhdGlvbnMgUExDMR4wHAYDVQQLExVDZXJ0aWZpY2F0ZSBB
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ANBgNVBAgTBkxvbmRvbjEPMA0GA1UEBxMGTG9uZG9uMQ8wDQYDVQQKEwZCVCBTREsxLTArBgNVBAsTJDM0ZDU0NTkwLTRkZTEtNGJmNi04ZGMxLWZjODQzNzM1MmM4MjERMA8GA1UEAxMIcGhvb
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      </wsse:Security>
      <wsa:Action>http://sdk.bt.com/2007/01/WhiteLabelAuthentication#login</wsa:Action>
      <wsa:MessageID>urn:uuid:e12edac3-f87d-3e0a-b621-04fa4d0b8cda</wsa:MessageID>
   </SOAP-ENV:Header>
   <SOAP-ENV:Body wsu:Id="78223460-ef68-5501-83d6-a5edb6d452b6">
      <ns1:login>
         <ns1:userName>paul.downey@bt.com</ns1:userName>
         <ns1:password>2344324t</ns1:password>
      </ns1:login>
   </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```
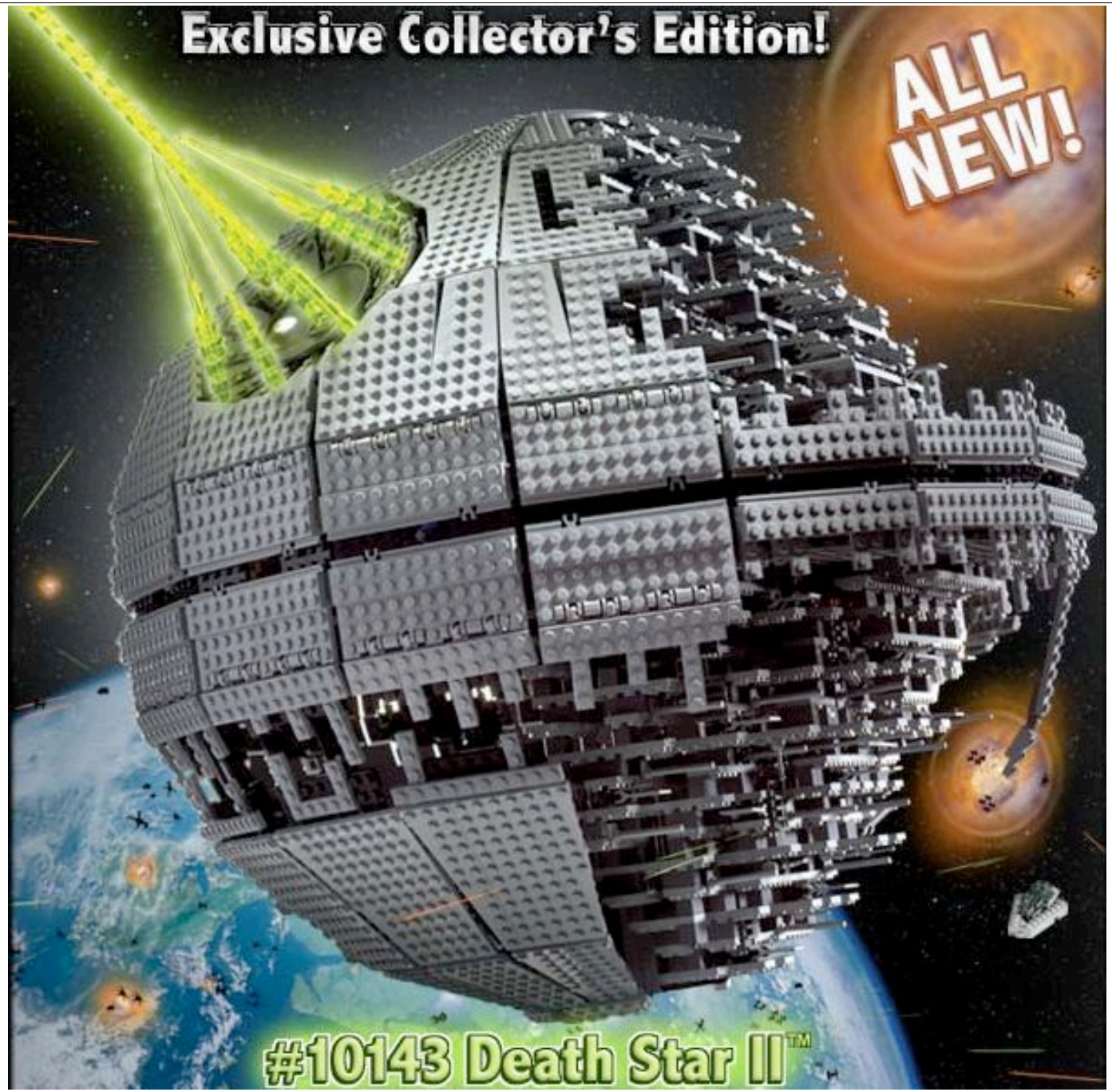


Exclusive Collector's Edition!
ALL NEW!
#10143 Death Star II™

Pain Points

- message contents
- versioning
- asynchronous transports

ALWAYS
OPEN
NEVER
CLOSED.
NO
WAITING.

Services on The Web

skobse
shadows
grovee
YouTube
Zimbra
LookSmart
FURL | Your Personal Web File
smugmug
the ultimate in photo sharing
newsgator
Blogniscient
The bird's eye view of the Blogosphere
TiNFiNGER
shutterfly
feedia
PodDater
Feedster
favoor
Planzo.com
The Online Planning Community
ZAZZLE
Tailrank
TagWorld
nuvvo
Learn something new.
dogear
yakalike
grouper
ODDPOST
QOOP
iNods
Lulu
BR
BETA
blish
The easiest place to buy or sell digital content
flagr
FireAnt
simplyhired
veoh
theadcloud
rbloc.com
pixagogo
gather
Agatra
browsr
oyogi
cafepress
Renkoo
YEDDA
standpoint
meebo
EXTRA TASTY!
last.fm
Jotspot
Frappr!
jeteye
dabble
db
Writeboard
SHOUTWIRE
iKarma
KaNOODLE
AirSet
tech memeorandum
CalendarHub
Suprglu
PIECING YOUR WEB TOGETHER
pando
zigtag
Findory
backfence
clipmarks
wayfaring
gOFFICE
AllPeers
orb
Rallypoint
Zoozio
blogbeat
Ziggs
zudo
vSocial
Boltfolio
wink
riya
Audible Wordcast
Opinity
Because your reputation matters!
reddit
measuremap
gumshoo
bluepulse
imvu
BETA
STREAMLOAD
Freedom for Your Digital Lifestyle
Ta-da Lists
FeedSky
jellyBarn.INC
nativetext
CONGOO
BETA
PODZINGER
BETA
RSS MAD
FeedTier
phanfare
WIKIPEDIA
The Free Encyclopedia
Fruitcast
PubSub
dPolls
flickr
Ning
Ookles
Strongspace
zoominfo
CASTPOST
ALPHA
yubnub
AC
ASSOCIATED CONTENT
BLOOP
BETA
ProjectSpaces
FeedBurner
Bloglines
purevolume.com
FOTOLOG
ourmedia
The Global Home for Grassroots Media
Yub.com
Spot Runner
BETA
myspace
a place for friends
NewsAlloy
BAllmydata.com
gabbr.com
a social news community
Gcast
blinkx
search
openomy
riffs
ajchat
alpha
jambo
NETWORKS
ROLLYO
BETA
Alexa
web search platform beta
chatsum
Beta
PANDORA
looklater
beta
PROTOPAGE
FREE PERSONAL START PAGES
squishr
WebJay
PLAZES
Noodly
30
BETA
wondir
diigo
BETA
box
Jots
Xdrive
vizu
beta
digg
del.icio.us
omni drive
AlmondRocks
Tagyu
Your tags, Smarter
30GIGS.com
(beta) writely
Simpy
Tag. Search. Share.
Gtalkr
BETA
TRUVEO
BETA
egoSurf
Know Your Place
mozy
beta
Quimble
pegasus
News
remember the milk
BETA
SQUIDOO
BETA
Everyone's an expert on something
picturecloud
.com
newsvine
Clipfire
Basecamp
Netvibes
gooWy
My Videokaroake
Beta
Lexxe
alpha
powered by advanced natural language technology
OOKSTER
BETA
PXN8
photos made easy
measuremap
facebook
43 Things
Technorati
Platial
Backpack
Gmail
BETA
yelp
beta
Real People. Real Reviews.
Smarkets
Buy/sell shares of Amazon Products
inform
BETA
filangy
beta
magnolia
ShoZu
wrickr.com
feedmarker
mercora
MusicSearch
ClipShack
beta
Meet With Approval.com
HOMEPORTALS
MIX. MODIFY. SHARE.
Spin
spy
(beta)

They HATE SOAP!

But

The Web

Isn't the Web "Good Enough?"

is it safe?

HTTP METHODS

method	safe	idempotent	semantics	resource	cacheable
GET	X	X	X	X	X
HEAD	X	X	X	X	X
PUT		X	X	X	
POST					*
DELETE		X	X	X	
OPTIONS	X	X	X		
PROPFIND	X	X	X	X	*
PROPPATCH		X	X	X	
MKCOL		*	X	X	
COPY		X	X	X	
MOVE		?	X	X	
LOCK			X	X	
UNLOCK		X	X	X	
PATCH		*	X	X	

POX ≡ SOAP

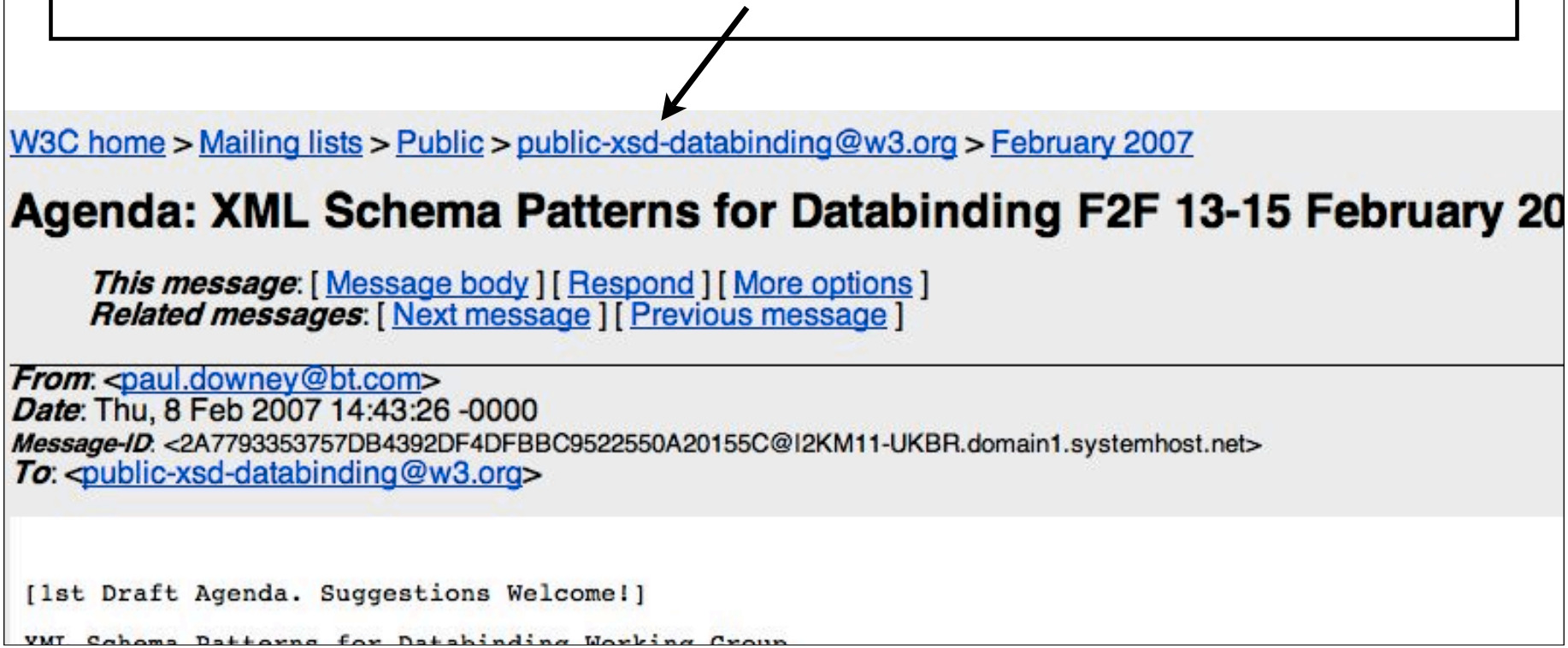
Resources demand cool URIs

Recent Phone Calls

```
HTTP GET http://example.com/calls/feed
↵
200 OK
Content-Type: application/atom+xml

<feed xmlns="http://www.w3.org/2005/Atom">
  <title>Phonebox Calls</title>
  <link rel="self" href="http://example.com/calls/"
        rel="alternate" type="text/html"/>
  <updated>2007-01-0911:45:02Z</updated>
  <author><name>Phonebox</name></author>
  <id>tag:example.com,2007-01-09:/calls</id>
  <entry>
   <link href="http://example.com/user/psd/calls/1234567/"/>
    <title>Call 1234567</title>
    <id>tag:example.com/calls/1234567-200701091223313</id>
    <summary>CallInformation</summary>
    <updated>2005-10-13T18:30:02Z</updated>
  </entry>
  <entry>
   <link href="http://example.com/user/fred/calls/17231667/"/>
    ...
```

Generate MessageIDs

```
   Message-Id:  <2A7793353757DB4392DF4DFBBC9522550A20155C@I2KM11-
                UKBR.domain1.systemhost.net>
X-Original-To:  public-xsd-databinding@w3.org
X-Archived-At:  http://www.w3.org/mid/
                2A7793353757DB4392DF4DFBBC9522550A20155C@I2KM11-
                UKBR.domain1.systemhost.net
```



W3C home > Mailing lists > Public > public-xsd-databinding@w3.org > February 2007

Agenda: XML Schema Patterns for Databinding F2F 13-15 February 20

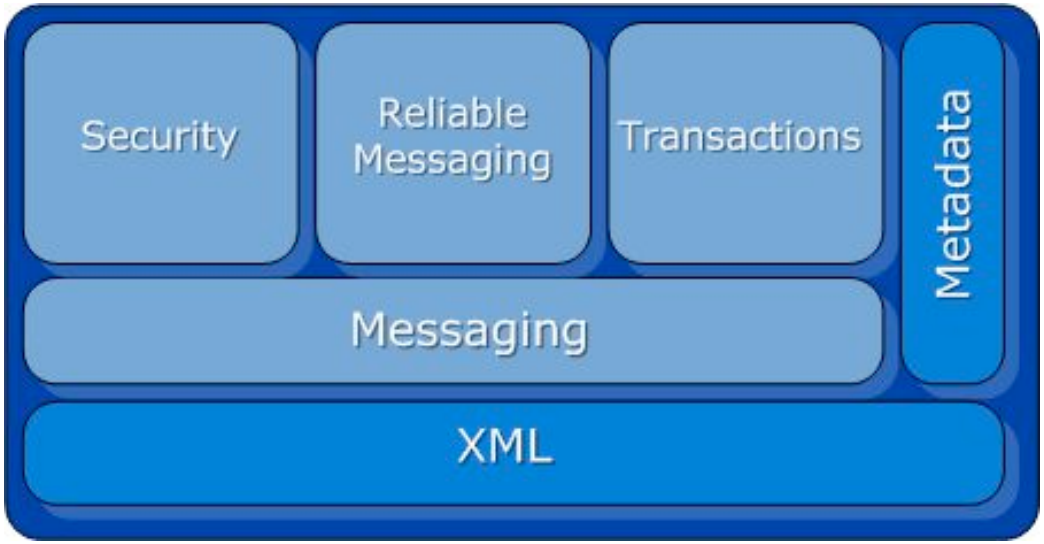
This message: [Message body] [Respond] [More options]
Related messages: [Next message] [Previous message]

From: <paul.downey@bt.com>
Date: Thu, 8 Feb 2007 14:43:26 -0000
Message-ID: <2A7793353757DB4392DF4DFBBC9522550A20155C@I2KM11-UKBR.domain1.systemhost.net>
To: <public-xsd-databinding@w3.org>

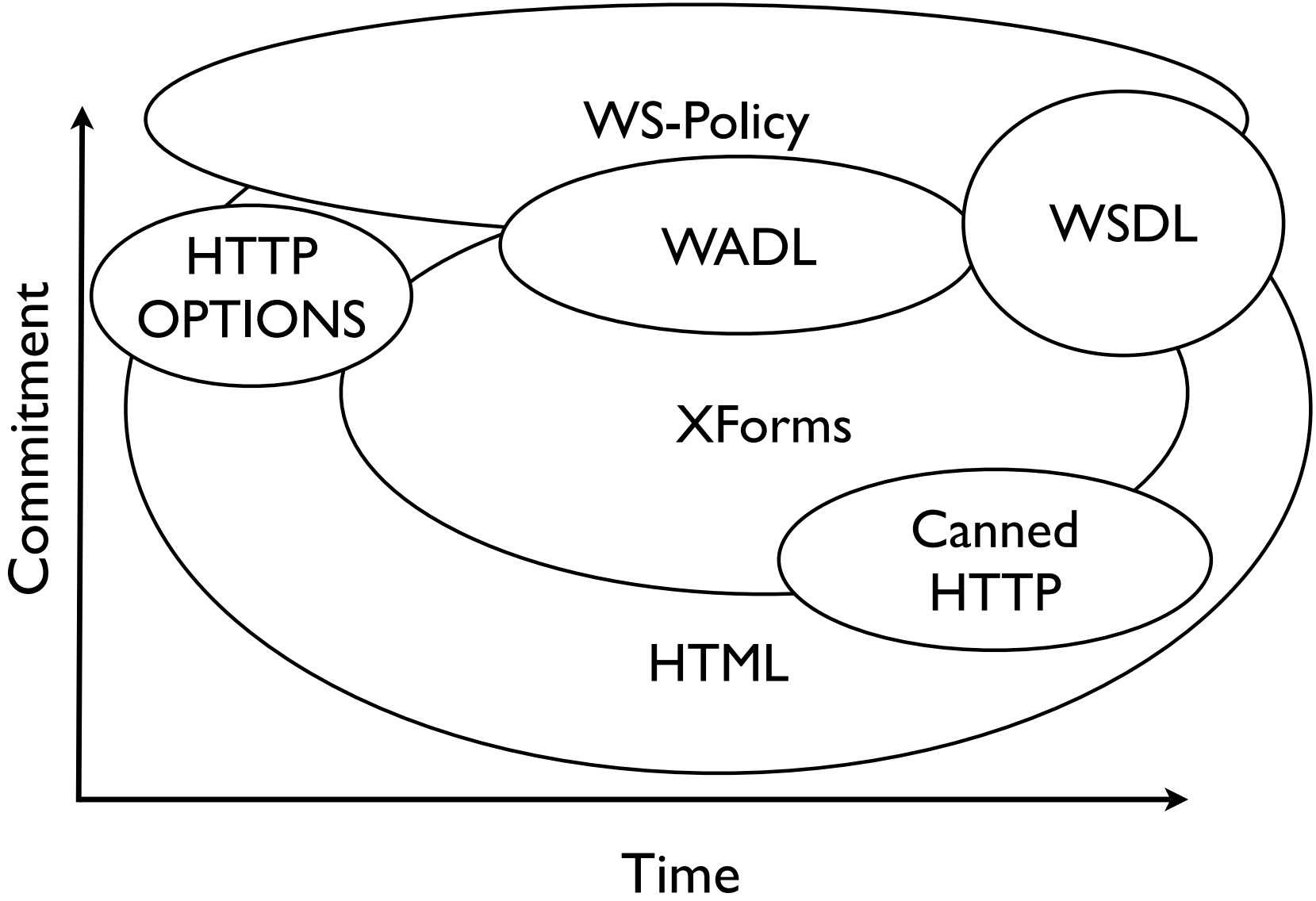
[1st Draft Agenda. Suggestions Welcome!]

XML Schema Patterns for Databinding Working Group

Stack


Security
Reliable Messaging
Transactions
Metadata
Messaging
XML

Meta-Meta-Data



Representations

- HTML
- RSS/Atom
- XML
- JSON
- *whatever*

Use Cases

- location
- data integration
- line test
- equipment failure

In Conclusion

The W3C

HOWTO: Constrain Web Services

"W3C Tax"

- SOAP 1.2 webMethod Feature
- WS-Addressing EPRs as Identifiers
- Unique wsa:MessageID
- WSDL 2.0 "safe" operations

Web Services & Services on the Web

The W3C

- Lead **The Web** to its full potential!
- Maintenance mode for Web services
- Consider forming a "Services on The Web" Best Practices Working Group