

B2B PlugTest 2008

Interoperability Test Base (V0.5)

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1 Introduction

1.1 Objectives

GENERAL BUSINESS OBJECTIVE: In order to exchange business documents, eGovernment and eBusiness primarily use two or three predominant transfer/transport interoperability exchange patterns at this time. Products available in the market support these standard exchange patterns, but they use different underlying technologies, and may or may not be able to exchange information readily because of gateway or product-to-product incompatibilities. Participants will gain a better understanding about operational readiness of standard-based middleware to these basic exchange patterns.

POINT OBJECTIVES:

- Facilitate product-to-product or product-gateway-product testing and analysis in a safe and neutral environment.
- For business participants: identify or refine the B2B solutions (architectures & standards) that best address their requirements, and make an assessment on how far the vendors / the products / the standards are from achieving these (interoperable) solutions.

This Interoperability Test Base is about verifying the ability of business partners to exchange electronic documents using (1) the most common transaction patterns, and (2) the most common execution modes for these transactions, in terms of security, connectivity, etc.

This Test Base does NOT intend to achieve:

- Exhaustive Interoperability testing for all execution modes of a business transaction.
- Testing Conformance of eBusiness infrastructure and of documents to the various standards involved in the transactions.

From this Test Base, different Test Plans can be derived based on participants needs and infrastructure specifics (see below). Some of these Test Plans are listed in Section 3.

1.2 Business Transaction Patterns

A couple of the most common Business Transaction (BT) Patterns is used as the basis for this Test Baseline. They correspond to two of the six basic UMM Business Transaction patterns identified by UN/CEFACT [...]:

- The Notification BT pattern
- The Request-Response BT pattern

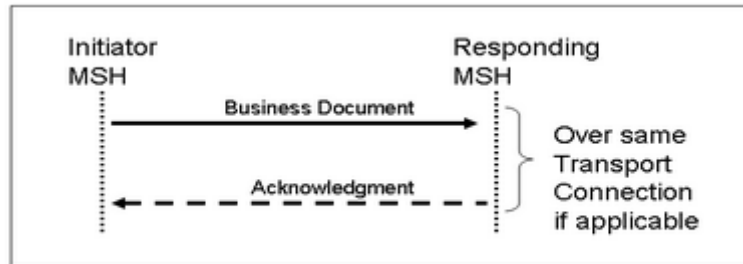
The Business Transactions patterns used here are refined from the above patterns as follows:

- The **Notification** BT pattern corresponds to the UMM Notification BT, extended with some form of Acknowledgment (optional in the UMM model). The Notification is an abstract name for the transfer of any business document from one party to the other, with no expected response except for an Acknowledgment. This Acknowledgment is not expected to provide more than an indicator of reception sent back by the Notification receiver, so that the Notification sender is aware of successful reception. It may however have additional semantics, depending on the protocols being used (e.g. non-repudiation of receipt, or other form of receipt validating the business document).

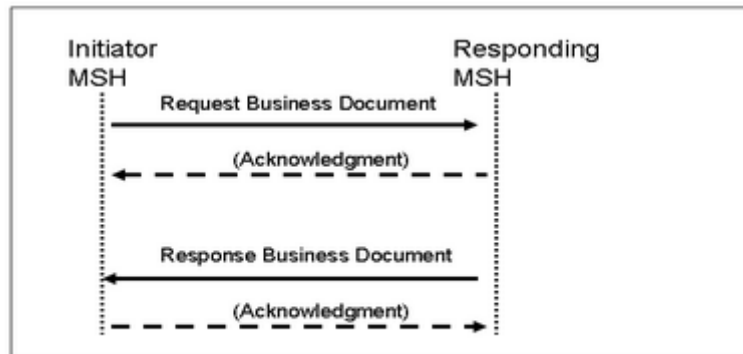
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- Details: In this pattern, the Acknowledgment must be above transport protocol level (e.g.in HTTP, an HTTP 200 response does not count as an Acknowledgment, neither do reply codes in SMTP). When using a request-response transport protocol (such as HTTP), the Acknowledgment is expected to be sent over the response. When using SMTP, no Acknowledgment is required for this pattern. When using SMTP, the Sending MSH will act as an SMTP client, the Receiving MSH will act as IMAP or POP3 client (for receiving from local SMTP server).
- The **Request-Response** BT pattern corresponds to the UMM Request-Response BT. The main difference is that the Response message has business content as in the Request, as opposed to the Acknowledgment in the Notification BT. Both Request and Response carry business documents that are supposed to involve application-level processing. In other words, it is a fully symmetric exchange that puts the same requirements for application binding on the back-end on both sides. There should be some explicit correlation indicator in the Response message payload (business document), so that it can be correlated with the Request message payload. Additional Acknowledgments or Receipts may be sent for each business message exchanged, in which case this BT would amount to a sequence of two Notification with Ack BTs in opposite directions.
- Details: When using a request-response transport protocol (such as HTTP), the Request and Response messages may be transferred over the same request-response exchange or two different (HTTP) connections – this depends on the BT mode of execution. When using SMTP, each party must act both as an SMTP client (for sending) and as IMAP or POP3 client (for receiving from local SMTP server).

Notification (with optional acknowledgment)



Request - Response



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1.3 Business Transaction Modes

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78 The two previous Business Transaction Patterns (BTP) can each be executed in a variety of modes, also
79 called **Business Transaction modes** (or BT modes). A mode of execution is defined by several
80 parameters called **aspects**.

81
82 The aspects of a business transaction are :

- 83
- 84 • **messaging** (messaging protocols, including the message exchange pattern in use if any)
 - 85 • **connectivity** (transport protocols, including the binding chosen for the messaging layer if
86 applicable)
 - 87 • **message QoS** (security, reliability, error reporting)
 - 88 • **transaction QoS** (timing constraints, error conditions)
 - 89 • **Application integration** (e.g. Web services, JMS, other)
 - 90 • **Document** (Business documents involved).
 - 91 • **Metadata** (Transaction-governing metadata - e.g. agreements and contracts such as CPAs,
92 interface definitions like WSDL, choreography definitions).
- 93

94 In order to interoperate business partners are expected to use the same Business Transaction mode, i.e.
95 to agree on every aspects of the Business Transaction.

96
97

98 1.4 Different Interoperability Objectives: Test Plans

99
100 This Interoperability Test Base is composed of a set of Test Units that exercise various BT modes.
101 Because an eBusiness infrastructure is not expected to support all possible modes of execution of a BT,
102 test participants will have to select which mode(s) they intend to use as interoperability basis with their
103 partner(s). These BT modes and related Test Units will be selected based on the objectives of participant
104 groups:

105

- 106 • Some participants will set their interoperability requirements based on a subset of BT modes defined
107 in this document, e.g. for a particular messaging middleware.
- 108 • Some will be interested in testing some bridge technology (across messaging middleware products).
- 109 • Some will be interested in business document interoperability, and in validation technology for
110 document conformance.

111
112 Consequently, participants will define **Test Plans** by combining Test Units from the Test Base. Such Test
113 Plans are listed in Section 3.

114

115 1.5 Readiness Assumption

116
117 This is a test base about Interoperability, which does not replace in any way Conformance tests to the
118 standards involved. Consequently it is strongly advised that users undergo related conformance testing
119 before using the present tests. See in section 2.2 the list of standards to which conformance of endpoints
120 is assumed before executing a test plan derived from this test base (to the extent this test plan uses these
121 standards).

122 2 Interoperability Test Units

123

124 2.1 Introduction

125

126 2.1.1 Conventions

127

128 Test Units are separated in two main groups:

- 129 • Test Units for the Notification with Ack BT pattern
- 130 • Test Units for the Request-Response BT pattern

131

132 Test Unit identification follows the following convention:

133 - Identifiers of the form: TU xxx-1 are for Notification w/Ack BTs.

134 - Identifiers of the form: TU yyy-2 are for Request-Response BTs.

135 When the first part of the identifier is same, e.g. TU101-1 and TU101-2, it means the BT aspects for the
136 first part of the Request-Response BT (messaging, connectivity, QoS, App.Integration, Document,
137 Contract) are equivalent to the BT aspects of the Notification w/Ack Test Unit with similar name, i.e.:

- 138 • if two partners are successful at executing TU xxx-1, they should succeed at least in the first part
139 of the exchange pattern involved in TU xxx-2.
- 140 • if two partners are successful at executing TU xxx-2, they do not need to test with TU xxx-1.

141

142 2.1.2 Standards Coverage

143

144 The Interoperability Test Units described in this document involve some features of a set of standards.
145 These standards are:

146 **Messaging:** ebMS V2, AS2, ebMS V3, SOAP/WS-I BasicProfile1.1

147 **Transport:** HTTP, HTTP/S, SMTP, SMTP/S

148 **Metadata:** ebXML CPPA, ebXML ebBP, WSDL, XML Schemas.

149 **Business Documents:** ebXML UN/CEFACT, EDIFACT (ODETTE-EDIFICE)

150

151

152 2.2 Tests for Homogeneous Exchanges - Transports & Documents

153 In each one of these these Test Units, both endpoints use the same messaging standard and the same
154 document(s) standard.

155 2.2.1 Test Unit TU101-1: ebMS2 Basic Interoperability (HTTP)

156 **Business Transaction Pattern:** Notification with Ack

157 **BT Aspects:**

- 158 • Messaging: ebMS V2
- 159 • Connectivity: HTTP - one HTTP transaction.
- 160 • Message QoS: Reliable messaging (At-Least-Once) for Notification, no Security
- 161 • Transaction QoS: N/A
- 162 • Application Integration: Open.
- 163 • Document: use of an ebXML UN/CEFACT document (Order).
- 164 • Metadata: document XML schemas, CPA tu101: with SyncReplyMode = mshSignalsOnly

165 **Test Scenarios:**

- 166 • Normal case: Initiator MSH sends a Order document to Responder MSH. A reliability
167 acknowledgment is received by the Initiator MSH.
- 168 • Error case: unrecognized Service/Action value: the message is not delivered, the Receiving MSH
169 sends back an ebMS error.

170 **Business relevance**: Representative of most one-way operations.

171 **Lead participant**: TBD

172 **Variant TU101-1b**: use a large payload (>10Mb)

173

174 2.2.2 Test Unit TU101-2: ebMS2 Basic Request-Response Interoperability 175 (HTTP)

176 **Business Transaction Pattern**: Request-Response

177 **BT Aspects:**

- 178 • Messaging: ebMS V2
- 179 • Connectivity: HTTP - two HTTP transactions.
- 180 • Message QoS: Reliable messaging (At-Least-Once) for Request and Response, no Security
- 181 • Transaction QoS: Time-to-perform < 2mn
- 182 • Application Integration: non specified.
- 183 • Document: use of ebXML UN/CEFACT documents: request using Order, and response using Order
184 Response.
- 185 • Metadata: doc schemas, CPA tu101. with SyncReplyMode = mshSignalsOnly

186 **Test Scenario:**

- 187 • Normal case: Initiator MSH sends a Order document to Responder MSH. After delivery, the
188 Responder application responds with Order Response document.
- 189 • Error case 1: bad document causes WS exception, escalated into ebMS error reporting.
- 190 • Error case 2: Time-to-perform exceeded.

191 **Business relevance**: Common business transaction pattern.

192 **Lead participant**: TBD

193 **Variant TU101-2b**: replace documents: Order / Order Response with: Order EDIFACT / Order
194 Response EDIFACT

195

196 2.2.3 Test Unit TU102-1: ebMS2 Secure Message (HTTP)

197 **Business Transaction Pattern**: Notification with Ack

198 **BT Aspects:**

- 199 • Messaging: ebMS V2
- 200 • Connectivity: HTTP - one HTTP transaction.
- 201 • Message QoS: Reliable messaging (At-Least-Once). Both header and payload Signed
- 202 • Transaction QoS: N/A
- 203 • Application Integration: Open.
- 204 • Document: use of an ebXML UN/CEFACT document (Order).
- 205 • Metadata: document XML schemas, X509 certificate, CPA tu102: with SyncReplyMode =
- 206 mshSignalsOnly.
- 207 **Test Scenarios:**
- 208 • Normal case: Initiator MSH sends a Order document to Responder MSH. The entire ebMS message
- 209 is signed, and the signature validated by the receiving MSH. A reliability acknowledgment is received
- 210 by the Initiator MSH.
- 211 • Error case: Signature cannot be validated (e.g. signed with wrong key): the message is not delivered,
- 212 the Receiving MSH sends back an ebMS error.
- 213 **Business relevance**: Representative of most one-way operations.
- 214 **Lead participant**: TBD
- 215 **Variant TU102-1b**: use a secure channel - HTTP/S
- 216

217 2.2.4 Test Unit TU102-2: ebMS2 Secure Request-Response (HTTP)

- 218 **Business Transaction Pattern**: Request-Response
- 219 **BT Aspects**:
- 220 • Messaging: ebMS V2
- 221 • Connectivity: HTTP - two HTTP transactions.
- 222 • Message QoS: In both directions: Reliable messaging (At-Least-Once). Both header and payload
- 223 Signed
- 224 • Transaction QoS: Time-to-perform < 2mn
- 225 • Application Integration: non specified.
- 226 • Document: use of ebXML UN/CEFACT documents: request using Order, and response using Order
- 227 Response.
- 228 • Metadata: document XML schemas, X509 certificate, CPA tu102: with SyncReplyMode =
- 229 mshSignalsOnly.
- 230 **Test Scenarios**:
- 231 • Normal case: Initiator MSH sends a Order document to Responder MSH. After delivery, the
- 232 Responder application responds with Order Response document. In both cases: A reliability
- 233 acknowledgment is received by the Sending MSH. The entire ebMS message is signed.
- 234 • Error case: unrecognized Service/Action value: message not delivered, sending back an ebMS error.
- 235 **Business relevance**: Representative of most request-responses operations.
- 236 **Lead participant**: TBD
- 237 **Variant TU102-2b**: use a secure channel - HTTP/S
- 238

239 2.2.5 Test Unit TU103-1: ebMS2 Basic Interoperability (SMTP)

- 240 **Business Transaction Pattern**: Notification

241 **BT Aspects:**

- 242 • Messaging: ebMS V2
- 243 • Connectivity: SMTP.
- 244 • Message QoS: No reliable messaging, no Security
- 245 • Transaction QoS: N/A
- 246 • Application Integration: Open. The Receiver MSH acts as an IMAP or POP3 client to local SMTP
- 247 server.
- 248 • Document: use of an ebXML UN/CEFACT document (Order).
- 249 • Metadata: document XML schemas, CPA tu103

250 **Test Scenarios:**

- 251 • Normal case: Sending MSH sends a Order document to an SMTP server on Receiving MSH side.
- 252 The Receiving MSH gets the message using IMAP / POP3.
- 253 • Error case: N/A.

254 **Business relevance**: Receiver MSH is not always connected.

255 **Lead participant**: TBD

256 **Variant TU103-1b**: use a large payload (>10Mb)

257

258 **2.2.6 Test Unit TU103-2: ebMS2 Basic Request-Response (SMTP)**

259 **Business Transaction Pattern**: Request-Response

260 **BT Aspects:**

- 261 • Messaging: ebMS V2
- 262 • Connectivity: SMTP.
- 263 • Message QoS: No reliable messaging, no Security
- 264 • Transaction QoS: N/A
- 265 • Application Integration: Open. On both sides, the Receiving MSH acts as an IMAP or POP3 client to
- 266 local SMTP server.
- 267 • Document: use of ebXML UN/CEFACT documents: request using Order, and response using Order
- 268 Response.
- 269 • Metadata: CPA tu103

270 **Test Scenarios:**

- 271 • Normal case: Sending MSH sends an Order document to an SMTP server on Receiving MSH side.
- 272 The Receiving MSH gets the message (with IMAP / POP3). The Receiving application responds with
- 273 Order Response.
- 274 • Error case: N/A.

275 **Business relevance**: On either side, the MSH may not always be connected.

276 **Lead participant**: TBD

277

278 **2.2.7 Test Unit TU104-1: ebMS2 Secure Message (SMTP)**

279 **Business Transaction Pattern**: Notification

280 **BT Aspects:**

- 281 • Messaging: ebMS V2

- 282 • Connectivity: SMTP.
- 283 • Message QoS: No reliable messaging. Message signed (XML sig).
- 284 • Transaction QoS: N/A
- 285 • Application Integration: Open. The Receiver MSH acts as an IMAP or POP3 client to local SMTP
286 server.
- 287 • Document: use of an ebXML UN/CEFACT document (Order).
- 288 • Metadata: X509 certificate, CPA tu104
- 289 **Test Scenarios:**
- 290 • Normal case: Sending MSH sends an Order document to an SMTP server on Receiving MSH side..
291 The message is signed (header + payload). The Receiving MSH gets the message using IMAP /
292 POP3.
- 293 • Error case: None.
- 294 **Business relevance**: Receiver MSH is not always connected, and cases where authentication is needed.
- 295 **Lead participant**: TBD
- 296 **Variant TU104-1b**: use a large payload (>10Mb)
- 297 **Variant TU104-1c**: SMTP-AUTH is used.
- 298 **Variant TU104-1d**: Message fully encrypted using S/MIME.
- 299

300 2.2.8 Test Unit TU104-2: ebMS2 Secure Request-Response (SMTP/S)

- 301 **Business Transaction Pattern**: Request-Response
- 302 (to complete) **BT Aspects**:
- 303 • Messaging: ebMS V2
- 304 • Connectivity: SMTP.
- 305 • Message QoS: No reliable messaging. Message signed (XML sig).
- 306 • Transaction QoS: N/A
- 307 • Application Integration: Open. On both sides, the Receiving MSH acts as an IMAP or POP3 client to
308 local SMTP server.
- 309 • Document: use of ebXML UN/CEFACT documents: request using Order, and response using Order
310 Response.
- 311 • Metadata: X509 certificate, CPA tu104
- 312 **Test Scenarios:**
- 313 • Normal case: Sending MSH sends an Order document to an SMTP server on Receiving MSH side.
314 The message is signed (header + payload). The Receiving MSH gets the message (with IMAP /
315 POP3). The Receiving application responds with Order Response document, also signed.
- 316 • Error case: None.
- 317 **Business relevance**: On either side, the MSH may not always be connected. Cases where
318 authentication is needed.
- 319 **Lead participant**: TBD
- 320 **Variant TU104-2b**: SMTP-AUTH is used.
- 321 **Variant TU104-2c**: Message fully encrypted using S/MIME.
- 322

323 2.2.9 Test Unit TU105-1: AS2 Basic Interoperability (HTTP)

324 **Business Transaction Pattern:** Notification

325 **BT Aspects:**

- 326 • Messaging: AS2
- 327 • Connectivity: HTTP.
- 328 • Message QoS: No reliable messaging but MDN expected. No Security.
- 329 • Transaction QoS: N/A
- 330 • Application Integration: Open.
- 331 • Document: use of an Order EDIFACT.
- 332 • Metadata: document XML schemas, CPA tu105

333 **Test Scenarios:**

- 334 • Normal case: Sending endpoint sends an Order EDIFACT document. The Receiving endpoint
335 responds with an MDN, in a synchronous way.
- 336 • Error case: None.

337 **Business relevance:** Representative of most one-way operations.

338 **Lead participant:** TBD

339 **Variant TU105-1b:** use a large payload (>10Mb)

340

341 2.2.10 Test Unit TU105-2: AS2 Basic Request-Response (HTTP)

342 **Business Transaction Pattern:** Request-Response

343 **BT Aspects:**

- 344 • Messaging: AS2
- 345 • Connectivity: HTTP.
- 346 • Message QoS: No reliable messaging but MDN expected. No Security.
- 347 • Transaction QoS: N/A
- 348 • Application Integration: Open.
- 349 • Document: use of an Order and Order Response EDIFACT.
- 350 • Metadata: document XML schemas, CPA tu105

351 **Test Scenarios:**

- 352 • Normal case: Initiator party sends an EDIFACT Order to an AS2 handler on Receiving side, receives
353 an MDN. The Receiving party responds with Order Response, and obtains an MDN.
- 354 • Error case: None.

355 **Business relevance:** Common protocol for two-way operations.

356 **Lead participant:** TBD

357 **Variant TU105-2b:** use a large payload (>10Mb)

358

359

360 2.3 Tests for Cross-Protocol Messaging

361

362 These Test Units involve a bridge or gateway that performs conversions between messaging protocols.

363 2.3.1 Test Unit TU106-1: One-way Bridge ebMS2-to-AS2

364 **Business Transaction Pattern:** Notification with Ack

365 **BT Aspects:**

- 366 • Messaging: ebMS V2 + AS2
- 367 • Connectivity: HTTP - one HTTP transaction (?)
- 368 • Message QoS: Reliable messaging (At-Least-Once) + AS2 MDN. No Security
- 369 • Transaction QoS: N/A
- 370 • Application Integration: Open.
- 371 • Document: use of an ebXML UN/CEFACT document (Order).
- 372 • Metadata: document XML schemas, CPA tu106: with SyncReplyMode = mshSignalsOnly

373 **Test Scenarios:**

- 374 • Normal case: Initiator ebMS party sends a Order document to Responder party. A Gateway acts as
375 ebMS2-AS2 bridge. A reliability acknowledgment is received by the Initiator MSH if Gateway has
376 been able to process message correctly. The Gateway forwards the payload as an AS2 message.
377 The Gateway gets the MDN but does not translate it back as ebXML message (?)
- 378 • Error case: inability to bridge the message: sending back an ebMS error to Initiator.

379 **Business relevance:** Interoperability between ebMS2 – AS2 endpoints.

380 **Lead participant:** TBD

381 **Variant TU106-1b:** use a large payload (>10Mb)

382 **Variant TU106-1c:** The MDN is translated back as an ebMS message to the Initiator MSH.

383

384 2.3.2 Test Unit TU106-2: Two-way Bridge ebMS2 / AS2

385 **Business Transaction Pattern:** Request-Response

386 **BT Aspects:**

- 387 • Messaging: ebMS V2 + AS2
- 388 • Connectivity: HTTP
- 389 • Message QoS: No Reliable Messaging. No Security
- 390 • Transaction QoS: N/A
- 391 • Application Integration: Open.
- 392 • Document: use of ebXML UN/CEFACT documents: request using Order, and response using Order
393 Response.
- 394 • Metadata: CPA tu106: with SyncReplyMode = mshSignalsOnly

395 **Test Scenarios:**

- 396 • Normal case: Initiator ebMS party sends an Order document to Responder party. A Gateway acts as
397 ebMS2-AS2 bridge. The Gateway forwards the payload as an AS2 message. The recipient sends
398 back an Order Response over AS2, which is converted into an ebMS2 messages by the
399 Gateway.
- 400 • Error case: inability to bridge the message: sending back an ebMS error to Initiator.

401 **Business relevance:** Interoperability between ebMS2 – AS2 endpoints, both ways.

402 **Lead participant:** TBD

403 **Variant TU106-2b:** use a large payload (>10Mb)

404

405 2.3.3 Test Unit TU107-1: ebMS2 Transport Bridge (HTTP-to-SMTP)

406 **Business Transaction Pattern:** Notification with Ack

407 **BT Aspects:**

- 408 • Messaging: ebMS V2
- 409 • Connectivity: HTTP (one HTTP transaction) relayed by one SMTP request.
- 410 • Message QoS: Reliable messaging (At-Least-Once), no Security
- 411 • Transaction QoS: N/A
- 412 • Application Integration: (as for ebMS2/SMTP Test Unit).
- 413 • Document: use of an ebXML UN/CEFACT document (Order).
- 414 • Metadata: document XML schemas, CPA tu107: with SyncReplyMode = mshSignalsOnly

415 **Test Scenarios:**

- 416 • Normal case: Initiator party sends a Order document to Responder party. An ebMS2 Gateway acts as
417 HTTP-to-SMTP bridge (and SMTP client). A reliability acknowledgment is received by the Initiator
418 MSH if Gateway has been able to process message correctly.
- 419 • Error case: inability to bridge the message: sending back an ebMS error to Initiator.

420 **Business relevance:** Receiver MSH is not always connected. Interoperability between HTTP vs. SMTP
421 endpoints.

422 **Lead participant:** TBD

423 **Variant TU107-1b:** use a large payload (>10Mb)

424

425 2.3.4 Test Unit TU107-2: ebMS2 Transport Bridge (Two-way HTTP / SMTP)

426 **Business Transaction Pattern:** Request-Response

427 **BT Aspects:**

- 428 • Messaging: ebMS V2
- 429 • Connectivity: HTTP (one HTTP transaction) relayed by one SMTP request.
- 430 • Message QoS: Reliable messaging (At-Least-Once), no Security
- 431 • Transaction QoS: N/A
- 432 • Application Integration: (as for ebMS2/SMTP Test Unit).
- 433 • Document: use of ebXML UN/CEFACT documents: request using Order, and response using Order
434 Response.
- 435 • Metadata: document XML schemas, CPA tu107: with SyncReplyMode = mshSignalsOnly

436 **Test Scenarios:**

- 437 • Normal case: Initiator party (Supplier) sends a Order document to Responder party. An ebMS2
438 Gateway acts as HTTP-to-SMTP bridge (and SMTP client). Manufacturer sends back Order
439 Response over SMTP. The Gateway converts back into HTTP before sending to Supplier.
- 440 • Error case: inability to bridge the message: sending back an ebMS error to Initiator.

441 **Business relevance:** Receiver MSH is not always connected. Interoperability between HTTP vs. SMTP
442 endpoints.

443 **Lead participant:** TBD

444 **Variant TU107-2b:** use large payloads (>10Mb)

445

446

447 2.4 Tests for Web Services Integration

448 These Test Units assume a back-end application binding in form of Web service. The Web service may
449 be public (accessible by business partners) as assumed by TU 108-1 & TU 108-2, or may be private i.e.
450 internally published, as assumed by TU 109-1 and TU 109-2.

451

452 2.4.1 Test Unit TU 108-1: Web Service Basic Profile (SOAP/HTTP)

453 **Business Transaction Pattern:** Notification

454 **BT Aspects:**

- 455 • Messaging: SOAP, WS-I Basic Profile (1.1) compliant.
- 456 • Connectivity: HTTP, (a single HTTP transaction)
- 457 • Message QoS: No Reliability. No Security.
- 458 • Transaction QoS: N/A
- 459 • Application Integration: Inventory Web service, One-way “SyncShipment “ operation, document-
460 based.
- 461 • Document: use of an OAGI XML document (SyncShipment BOD), validated by Web service.
- 462 • Metadata: document schema, WSDL file (shared by both sides)

463 **Test Scenario:**

- 464 • Normal case step 1: WSDL file tested for compliance to WS-I BP1.1.
- 465 • Normal case step 2: WS Client sends a SyncShipment document to Service by invoking the Inventory
466 Web service.
- 467 • Error case 1: WSDL file with non-compliant elements to WS-I.
- 468 • Error case 2: bad XML document causes WS exception, sent back as a SOAP Fault.

469 **Business relevance:** Case where the Web service has a public interface, with WSDL published
470 externally.

471 **Lead participant:** Fujitsu (meaning here: Fujitsu is proposing this test unit and prepared to execute it. In
472 the absence of a partner, can demonstrate it in playing both sides.)

473

474 2.4.2 Test Unit TU 108-2: Web Service Request-Response Basic Profile 475 (SOAP/HTTP)

476 **Business Transaction Pattern:** Request-Response

477 **BT Aspects:**

- 478 • Messaging: SOAP, WS-I Basic Profile (1.1) compliant.
- 479 • Connectivity: HTTP, (two HTTP transactions)
- 480 • Message QoS: No Reliability. No Security.
- 481 • Transaction QoS: N/A
- 482 • Application Integration: Inventory Web service (manufacturer side), One-way “SyncShipment “
483 operation, document-based. Callback response with SyncReceiveDelivery (invoking another WS on
484 Supplier side).
- 485 • Document: use of OAGI XML document schemas (SyncShipment, SyncReceiveDelivery BODs),
486 validated by Web service.
- 487 • Metadata: document schema, two WSDL files (shared by both sides)

488 **Test Scenario:**

- 489 • Normal case step 1: WSDL files tested for compliance to WS-I BP1.1.
- 490 • Normal case step 2: Supplier invokes Manufacturer Inventory WS with SyncShipment document.
491 Manufacturer responds by invoking Supplier Web service with related SyncReceiveDelivery.
- 492 • Error case 1: WSDL file with non-compliant elements to WS-I.
- 493 • Error case 2: bad XML documents cause either WS failure, sending back as a SOAP Fault.
- 494 **Business relevance**: Case where the Manufacturer Inventory has a public WSDL interface. Async
495 exchanges require Supplier to deploy a response WS.
- 496 **Lead participant**: (?)
- 497

498 2.4.3 Test Unit TU 109-1: ebMS V3 (HTTP) - Web Service Integration

499 **Business Transaction Pattern**: Notification with Ack

500 **BT Aspects**:

- 501 • Messaging: ebMS V3
- 502 • Connectivity: HTTP, (a single HTTP transaction)
- 503 • Message QoS: Reliable messaging (At-Least-Once), no Security
- 504 • Transaction QoS: N/A
- 505 • Application Integration: Inventory Web service, One-way “SyncShipment “ operation
- 506 • Document: use of an OAGI XML document (SyncShipment BOD), validated by Web service.
- 507 • Metadata: document schema, WSDL file (only used on Receiver side)

508 **Test Scenario**:

- 509 • Normal Case: ebMS Client sends a SyncShipment document to ebMS partner. The partner
510 automatically transfers the document to back-end Web service, which validates the (XML) document.
- 511 • Error case: bad XML document causes WS exception, escalated into ebMS error reporting on back-
512 channel.

513 **Business relevance**: Case where the Web service is deployed internally, with WSDL remaining internal
514 (not public). Partners only need to know about business document formats.

515 **Lead participant**: Fujitsu (meaning here: Fujitsu is proposing this test unit and prepared to execute it. In
516 the absence of a partner, can demonstrate it in playing both sides.)

517 **Variant TU109-1b**: Use persistent Security (WSS compliant).

518

519 2.4.4 Test Unit TU 109-2: ebMS V3 (HTTP) - Web Service Request-Response 520 Integration

521 **Business Transaction Pattern**: Request-Response

522 **BT Aspects**:

- 523 • Messaging: ebMS V3, Two-way / Push-and-Pull MEP
- 524 • Connectivity: HTTP
- 525 • Messaging QoS: Reliable messaging (At-Least-Once) for Request, no Security
- 526 • Transaction QoS: N/A
- 527 • Application Integration: Inventory Web service, One-way “SyncShipment “ operation. The WS uses
528 call-back to the Receiver MSH to communicate asynchronous response: SyncReceiveDelivery.
- 529 • Document: SyncShipment BOD, SyncReceiveDelivery BOD.
- 530 • Metadata: doc schemas. WSDL file (only used on Receiver side).

531 **Test Scenario:**

532 • Normal case: ebMS Client sends a SyncShipment document to ebMS partner. The partner MSH
533 automatically transfers the document to back-end Web service, and responds with
534 SyncReceiveDelivery (callback). ebMS Client then pulls the response from the Receiving MSH.

535 • Error case: bad document causes WS exception, escalated into ebMS error reporting.

536 **Business relevance**: case where the Web service is deployed internally, with WSDL publishing
537 remaining internal. The Client is a SME with no IP address: must pull responses.

538 **Lead participant**: Fujitsu

539 **Variant TU109-2b**: replace documents: SyncShipment with: Order ebXML Cross Industry
540 UN/CEFACT, and SyncReceiveDelivery with Order Response.

541

542 **2.5 Tests for Cross-Protocol and Cross-Document Exchanges**

543 These Test Units involve a bridge or gateway that performs conversions between messaging protocols,
544 and also conversions across different document models.

545

546 **2.5.1 Test Unit TU 110-1: One-way Document Mapping: EDIFACT-to-ebXML-**
547 **Cross-Industry**

548 **Business Transaction Pattern**: Notification

549 **BT Aspects**:

550 • Messaging: ebMS2

551 • Connectivity: Use of Gateway over HTTP

552 • Message QoS: None

553 • Transaction QoS: N/A

554 • Application Integration: Open

555 • Document: EDIFACT order (Edifice) and Order ebXML Cross Industry UN/CEFACT
556 equivalent.

557 • Metadata: ebXML CPA tu110

558 **Test Scenario**:

559 • Normal Case: ebMS Client sends EDIFACT order document to partner. The Gateway automatically
560 converts it into ebXML Cross Industry UN/CEFACT.

561 • Error case: bad document format causes conversion failure.

562 **Business relevance**: Case where business partners use different business document formats.

563 **Lead participant**: (?)

564 **Variant TU110-1b**: Use DELJIT (Delivery Planning / Appel de livraison) (EDIFICE, ODETTE)
565 instead of EDIFACT order.

566

567 **2.5.2 Test Unit TU 110-2: Two-way Document Mapping: EDIFACT-to-ebXML-**
568 **Cross-Industry and reverse**

569 **Business Transaction Pattern**: Request-Response

570 **BT Aspects**:

571 • Messaging: ebMS2

- 572 • Connectivity: Use of Gateway over HTTP
- 573 • Message QoS: None
- 574 • Transaction QoS: N/A
- 575 • Application Integration: Open
- 576 • Document: EDIFACT order (Edifice) and Order ebXML Cross Industry UN/CEFACT
577 equivalent.
- 578 • Metadata: ebXML CPA tu110
- 579 **Test Scenario:**
- 580 • Normal Case: ebMS Client sends EDIFACT order document to partner. The Gateway automatically
581 converts it into ebXML Cross Industry UN/CEFACT. Partners sends back Order Response
582 ebXML Cross Industry UN/CEFACT. Gateway converts in EDIFACT.
- 583 • Error case: bad document format causes conversion failure.
- 584 **Business relevance**: Case where business partners use different business document formats.
- 585 **Lead participant**: (?)
- 586 **Variant TU110-2b**: Use DELJIT (Delivery Planning / Appel de livraison) (EDIFICE, ODETTE) and
587 DESADV EDIFACT (Despatch Advice) instead of EDIFACT order and Order Response.
- 588 **Variant TU110-2c**: Receiver sends back both ebXML Cross Industry Despatch Advice and Invoice.
589 Both are converted respectively into DELJIT EDIFACT (Delivery Planning) and INVOICE
590 EDIFACT.
- 591
- 592
- 593

594

3 Test Plans

595

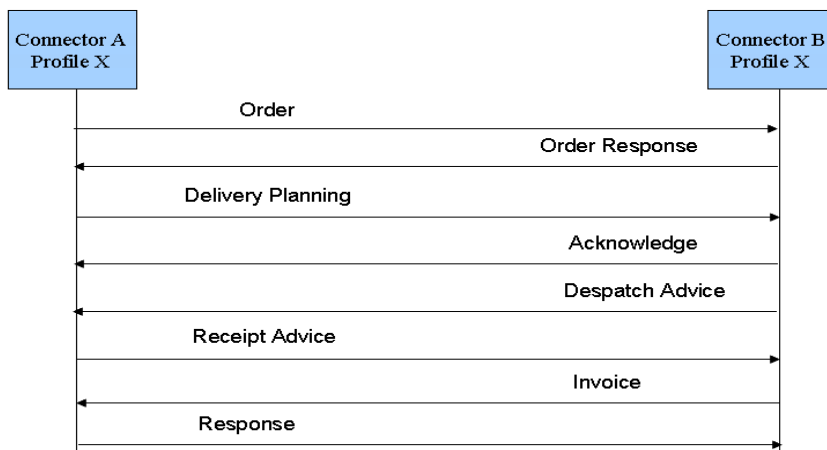
3.1 BoostAero Test Plan

3.1.1 eBusiness Choreography

598 The following choreography below is executed with proper correlation across business documents (all
599 documents relating to same Order identifier):

600

601 Connector-to-Connector:



602

603 The exchange corresponds to a sequence of the following test units:

604 (here for ebMS2 / HTTP)

605

3.1.2 Documents in Use

607 Order / OrderResponse ebXML UN/CEFACT

608

3.1.3 Test Suite

610

611 Initiated from Party A to Party B (same tests Initiated from Party B to Party A)

612 [Test Unit TU101-1](#) : ebMS2 Basic Interoperability (HTTP)

613 [Test Unit TU101-2](#) : ebMS2 Basic Request-Response Interoperability (HTTP)

614 [Test Unit TU102-1](#) : ebMS2 Secure Message (HTTP)

615 [Test Unit TU102-1b](#) : use a secure channel - HTTP/S

616 [Test Unit TU102-2](#) : ebMS2 Secure Request-Response (HTTP)

617 [Test Unit TU102-2b](#) : **Variant TU102-2b**: use a secure channel - HTTP/S

618 [Test Unit TU103-1](#) : Test Unit TU103-1: ebMS2 Basic Interoperability (SMTP)

619 [Test Unit TU103-2](#) : ebMS2 Basic Request-Response (SMTP)

620 Test Unit TU104-1 : ebMS2 Secure Message (SMTP)
 621 Test Unit TU104-1c : Variant TU104-1c: SMTP-AUTH is used.
 622 Test Unit TU104-1d : Variant TU104-1d: Message fully encrypted using S/MIME.
 623 Test Unit TU104-2 : ebMS2 Secure Request-Response (SMTP/S)
 624 Test Unit TU104-2b : Variant TU104-2b: SMTP-AUTH is used.
 625 Test Unit TU104-2c : Variant TU104-2c: Message fully encrypted using S/MIME.
 626

627 3.2 TICIO Test Plan

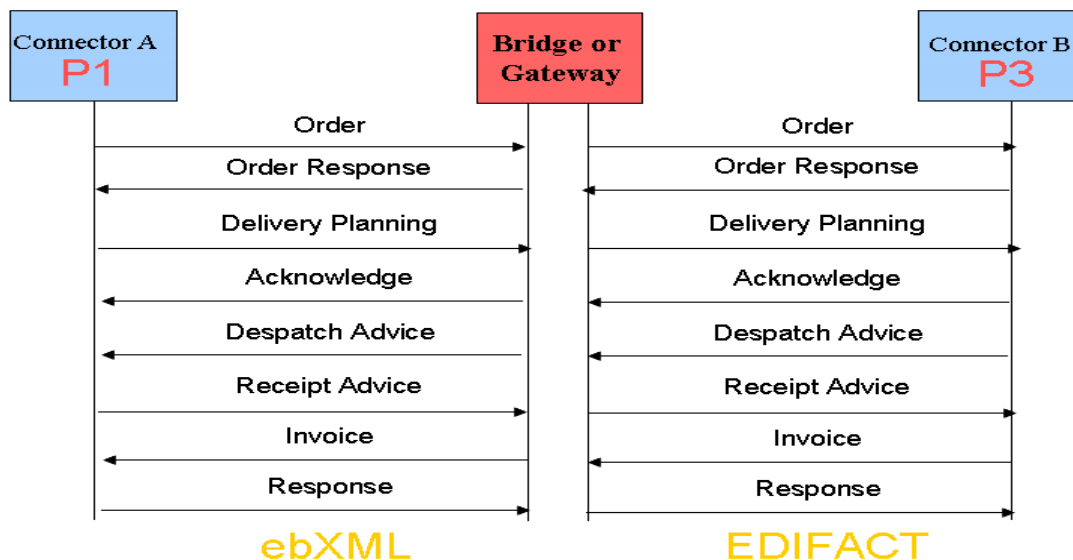
628 3.2.1 eBusiness Choreography

629 The following choreography below is executed with proper correlation across business documents (all
 630 documents relating to same Order identifier): The same choreography must be executable end-to-end via
 631 a protocol bridge

632

633 Connector-to-Bridge-to-Connector:

634



635

636

637

638 3.2.2 Documents in Use

639 EDIFACT (EDIFICE):

640 Order EDIFICE

641 Order ebXML Cross Industry UN/CEFACT

642

643 3.2.3 Test Suite

644 Note: parties A and B are not necessarily same for all suites of tests below.

645
646 GROUP 1 : ebMS2 – AS2 bridge:
647
648 Initiated from Party A to Party B:
649 [Test Units TU106-1, 1c: One-way Bridge ebMS2-to-AS2](#)
650 [Test Unit TU106-2 : Two-way Bridge ebMS2 / AS2](#)
651
652 GROUP 2 : ebMS2 – HTTP/SMTP bridge:
653 Initiated from Party A to Party B:
654 [Test Units TU107-1 : ebMS2 Transport Bridge \(HTTP-to-SMTP\)](#)
655 [Test Units TU107-2 : ebMS2 Transport Bridge \(Two-way HTTP / SMTP\)](#)
656
657 GROUP 3 : Document conversions EDIFACT - ebXML Cross Industry UN/CEFACT:
658
659 Initiated from Party A to Party B:
660 [Test Unit TU 110-1 : One-way Document Mapping: EDIFACT-to-ebXML-Cross-Industry](#)
661 [Test Unit TU 110-2 : Two-way Document Mapping: EDIFACT-to-ebXML-Cross-Industry and reverse](#)
662
663 GROUP 4 : ebMS2 – ebMS2 : without Bridge
664 [Test Unit TU101-2 : ebMS2 Basic Request-Response Interoperability \(HTTP\)](#)
665
666 No done :
667 [Test Unit TU 110-2b and 2c](#)
668

669 **4 Appendix: Standard Metadata Documents**

670 **4.1 Payload Documents**

671

672 **4.2 CPA files**

673

674 **4.3 WSDL files**

675