Acknowledgements

The participation of SKLSE to the ebIOT (ebXML Interoperability Test) Asian test would not become a reality without the support of other partner organizations and many people concerned. We, on behalf SKLSE, would like to thank all those who have helped us along the way, and truly express our appreciation for all of you.

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A big thanks goes to CECID (Center for E-Commerce Infrastructure Development), University of Hong Kong, who provides SKLSE the MSH test environment and help us install the MSH system, fix problems etc. A special thanks to Mr. Patrick Yee, Thomas Lee and David Cheung, they have always been available for discussions when we needed them, and we feel privileged to have worked with them and CECID.

Finally, Thanks to KIEC (Korea Institute for Electronic Commerce) for the test preparation and management, all ebIOT test participants who help and advice SKLSE to improve the MSH system during the pre-test and feasibility test.
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Chapter 1

Test Environment in SKLSE

1.1 Test Participation Background

Electronic Commerce (short for e-Commerce) is the key word of the Digital Economy, and ebXML provides a backbone infrastructure for the building of e-Commerce platform by three layers, that is, ebMS (ebXML Message Service), BPSS (Business Process Specification Schema) and IM (Information Model) layers. While in China, still no Enterprises or Research Institutes pay much attention to this emerging technology and carry on related work on that. SKLSE, Wuhan University was so honored be invited to attend the 7th ebAC in Hong Kong, University of Hong Kong in 2002.11, and got this opportunity to:

- Get the latest experience of ebXML application in other Asian countries.
- Get ebXML Interoperability Test support (technological and tools) by CECID and Fujitsu.
- Participate the 1st ebIOT test with other ebIOT test participants, as the only representative from China mainland.
- Become a member of ebAC, and will join the effort of making a global e-Commerce market Asian-wide. Since 7th ebAC meeting, SKLSE will attend the every 3 months meeting arranged by ebAC.

Since the time duration for Fujitsu delivering Interstage (Version 5.0, which includes ebXML Message Service) Product to SKLSE and the remainder time for SKLSE preparing for the test is not so much, SKLSE finally chooses Hermes MSH (open source license) developed by CECID, University of Hong Kong as our MSH test system.

Fujitsu has agreed and sent the Interstage CD to SKLSE these days (2003.01), we will try to migrate our MSH system to Interstage and participate the following test based on it.

1.2 Introduction of Hermes MSH

Messaging Service is a key component in the ebXML technical architecture that enables the realization of the vision of creating a single global electronic marketplace for enterprises of any size and in anywhere.
Hermes MSH (Message Service Handler) is developed under the Project Phoenix, by the Center for E-Commerce Infrastructure Development, the University of Hong Kong. Project Phoenix is officially titled “Establishment of ebXML Software Infrastructure in Hong Kong”. As its name says, the project aims to establish an e-commerce infrastructure in Hong Kong using the ebXML standard.

Hermes MSH r0.9.2.0 is an MSH implemented by developers at the Center for E-Commerce Infrastructure Development at the University of Hong Kong. An open-source project released under the Academic Free License, and developed in JDK1.4, which includes:

- **Binary distribution**: a ready-for-distribution and compiled MSH java package
- **Java API documentation**: a classical Java API documentation for MSH java package
- **Source code distribution**: all source code for compiled MSH java package
- **Installation guide**: present the guidelines for installation of Hermes MSH. It provides step-by-step instructions to guide the users to download, to build and to deploy our MSH.
- **Development guide**: present the information for development of Hermes MSH, and describes the architecture of the implementation of MSH. It provides a high level understanding on what fundamental services the MSH supports, and how are we going to implement those services. It also describes the key components for building client applications to run on the MSH.

### 1.3 Functionality Provided by Hermes MSH

ebMS V2 Hermes MSH r0.9.2.0 is a Message Service Handler (MSH) implementation. It is in compliance with the OASIS ebXML Message Service (ebMS V2) standard. ebMS utilizes SOAP, Internet transport protocols, and other security standards to provide a standardized, reliable, and secure infrastructure for enterprises to exchange business documents.

Hermes MSH supports secure messaging functions through widely-adopted Internet security technologies, such as XML Signature, SSL (Secure Socket Layer) and S/MIME (Secure Multipurpose Internet Mail Extensions). It has also implemented reliable delivery features defined in ebMS Standard to ensure the exchanged message is received and intact. The feature list of Hermes MSH includes message packaging, reliable messaging, message ordering, error handling, security, synchronous reply, message status service, and RDBMS persistent storage. Hermes MSH also supports transport protocols, such as HTTP and SMTP, to suit different needs of large and small enterprises, and different business requirements.

In addition to secure and reliable messaging functions, Hermes MSH supports the
concept of ‘quality of service’ by respecting in-force agreements between itself and any other ebMS-compliant MSH with which it communicates. These agreements are expressed as CPA.

Hermes MSH provides a GUI Monitor, called MSH Monitor, to control the message sending and receiving with other related issues. This section, we will introduce the functionalities and features provided by MSH Monitor as follows:

**Login and Configuration Window**

Login window requires user to input information as follows (Optionally, the default setting can be overwritten by the settings set by a properties file called monitor.properties.xml, which can be found in the same directory where MSH Monitor is launched), below is a sample snapshot when Hermes MSH startup:

![Configuration Window](image)

**Figure 1: Hermes MSH Configuration Window**

<table>
<thead>
<tr>
<th><strong>To MSH URL</strong></th>
<th>The MSH endpoint of the receiver</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPA ID</strong></td>
<td>CPA ID for sending and receiving message</td>
</tr>
<tr>
<td><strong>Conversation ID</strong></td>
<td>Can be set as “*”, which means this item is generated by MSH system</td>
</tr>
<tr>
<td><strong>Service</strong></td>
<td>Service name, should be in a form of URI</td>
</tr>
<tr>
<td><strong>Action</strong></td>
<td>Action name</td>
</tr>
</tbody>
</table>
Retry Interval (ms) | Retry time interval for resending a message
--- | ---
Num Retry | Retry number when a message was failed to send to the receiver

**Table 1: Configuration items explanation when MSH startup**

After login step completes, logon window will provide information about: Tools name, Copyright, Startup Configurations, statues of “Incoming message handler” and “Outgoing message sender created” (ready or not), and message status (sending, receiving or error responses) when each message is sent out, below is a sample snapshot after Hermes MSH startup.

![Hermes MSH Logon Window](image)

**Figure 2: Hermes MSH Logon Window**

**Send Message**

Send message panel provides a basic configuration panel for sending a message, which is divided into Basic Information, Attachment, Digital Signature, Reliable Messaging, and Repeat send five sub-panels.

| Basic Information | Includes FromPatryID, ToPartyID, basic CPA info, TimeToLive, MessageID and Timestamp (if these two values are not set manually, you should check the “Auto Generate” |
### Attachment
Users can add any number of attachments in this sub-panel.

### Digital Signature
To set the digital signature of the sender when an authentication feature is required.

### Reliable Messaging
Check the “Reliable Messaging” box when this feature is required.

### Repeat send
Set the repeat send parameters such as interval and repeat send times.

---

#### Figure 3: Hermes MSH Send message panel

**Send, Receive, Error Message History record**

Among MSH Monitor horizontal tab panel, there are three history panels used to record Send, Receive, and Error message (since they look similar, we only illustrate Send History panel here). The message basic information is shown in a table (Date, MessageID, etc), and user can double click the message to launch a message box where the message content will be shown here (see figure below).
Figure 4: Hermes MSH Send History Panel

Figure 5: Message content shown in Message box
Control and Diagnostics

Control panel is used to control the means of message acknowledgement, and Diagnostics panel is used to support a set of function for the sender to dump all the states of the MSH out. This will be useful when something wrong happened, and the dump may help to trace the problem.

Figure 6: Hermes MSH Control Panel
1.4 Test Environment

In this section, we will describe the test environment in SKLSE part by part, which includes Operating System, Web Server & Servlet Container, HTTP Monitoring Tool, MSH Endpoint, Database and Mail Server.

**Operating System:** Windows 2000 Professional, this is a reliable Operating System for business.
Web Server & Servlet Container: Tomcat 4.0.6 (run on J2SE 1.4.1)

The core part of Hermes MSH is a servlet. Therefore, it runs on a servlet container. Hermes MSH was developed and tested under Jakarta Tomcat 4.0.x, which is a reference implementation of Java Servlet specification. Therefore, we adopt Tomcat 4.0.6 as the servlet container. Meanwhile, Tomcat can also be used as the web server (functionality provided along with Tomcat), which makes the MSH endpoint can be accessed by HTTP protocol.
**MSH**: Hermes MSH

In the pre-test and online feasibility test round in January 2003, we used Hermes MSH version r.0.9.2.0, and after the test we updated Hermes MSH to version r.0.9.3.0 in order to solve the problem found in the previous tests. The introduction and functionalities of Hermes MSH have been discussed above, we neglect it here.

**HTTP Monitoring Tool**: TCP Monitor included in Apache Axis 1.1 beta

For the pre-test, each partner should place its dump data of the message. TCP Monitor can be used to catch the dump data between the HTTP transportation during message sending and receiving.
Chapter 1 Test Environment in SKLSE

Figure 9: TCP Monitor listen window

**MSH Endpoint**: [http://61.183.121.132:8080/msh/](http://61.183.121.132:8080/msh/)

Since we deployed Hermes MSH on the Tomcat application server with `/msh/` as the context path. In other words, we target to access the MSH application server with the following URL:

http://<host.name>:<port>/msh/

The default port to use for Tomcat is 8080, and the server’s Fixed IP is 61.183.121.132.
Database: HSQLDB

The MSH needs a database to store the status of communication, to support resilience, reliable messaging, message tracking, etc. Hermes MSH followed SQL92 standard when designing the MSH database tables. So it basically supports all RDBMS, as long as their JDBC drivers are available.

We used HSQLDB as the database, and HSQLDB JDBC driver is bundled in Hermes MSH r0.9.2.0 distribution, which is a file-based, single user database.
Chapter 1 Test Environment in SKLSE

Figure 11: HSQLDB Database logon window

Figure 12: HSQLDB Database Operation Window
Mail Server: IMail

Hermes MSH supports to use SMTP as the underlying transport protocol optionally. In other words, whenever our MSH needs to send out messages using SMTP protocol, it will make use of a SMTP based mail server as the outgoing mail server, and it supports SMTP authentication optionally.

And the MSH will assume its incoming messages via SMTP protocol to be handled and stored by the SMTP based mail server. Periodically, the MSH will query the mail server using POP3 or IMAP protocol to get those incoming messages for further processing.

Therefore, the choice of mail servers is arbitrary, as long as it supports SMTP, as well as POP3 or IMAP. In our test environment, we used IMail as the Mail Server.

![IMail Administrator Tool](image)

Figure 13: IMail Administrator Tool

1.5 CPA Information of SKLSE

Basic CPA Information of SKLSE

<table>
<thead>
<tr>
<th>Party ID</th>
<th>SKSLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPA ID</td>
<td>ebIOT-CPAT1.SKLSE.OTHER</td>
</tr>
<tr>
<td></td>
<td>(for sending a message to other test participants)</td>
</tr>
</tbody>
</table>
Table 2: Basic CPA Information of SKLSE

| Conversation ID | ebIOT-CPAT1.OTHER. SKLSE (for receiving a message from other test participants) |
| Conversation ID | Generated automatically by MSH System when each message is sent out |
| Service         | urn:ebIOT-TestService:order |
| Action          | Order |

<?xml version="1.0"?>
<tp:CollaborationProtocolAgreement
  ..
  tp:cpaid="ebIOT-CPAT1.SKLSE.OTHER"
  tp:version="2_0">
  <!-- Party-Buyer PartyInfo -->
  <tp:PartyInfo
    tp:partyName="SKLSE"
    ..>
  <!-- Party-Buyer PartyId -->
  ..
  <tp:PartyId tp:type="ebIOT">SKLSE</tp:PartyId>
  <!-- Service (urn:ebIOT-TestService:order) -->
  <tp:Service tp:type="anyURI" urn:ebIOT-TestService:order</tp:Service>
  <tp:ThisPartyActionBinding
    tp:id="BuyerActionBinding"
    tp:action="Order"
    tp:packageId="Party-Buyer-pack001">
  ..

Figure 14: Part CPA file for SKLSE sending a ebXML message
Chapter 2

Test Procedure and Result

Here we only give a brief description about the test procedure and test items, detailed test action list and procedure can be found on both (1) ebIOT mailing list archive [AsialTG:12] Action item list by Masahiko Narita and (2) Test procedure on Internet [5] by ebIOT-WG, ECOM. We will present the test result in each test respectively.

2.1 Pre-test

Pre-test Procedure

The test item for the Pre-test is T1-1-1 defined by the ECOM "ebXML Interoperability Test Specification, Part I, Version 1.0". Participants should place data on the transport in DUMP format on the web, and conduct the pre-test locally, to test again vender-specific MSH system by dump data from other venders' MSH products. This test is conducted offline.

SKLSE test Result of Pre-test

The test result of other test participants' dump data by SKLSE MSH

<table>
<thead>
<tr>
<th>country</th>
<th>Organization</th>
<th>Tester</th>
<th>Test Date/Time</th>
<th>Result</th>
<th>Problems</th>
<th>Action s (or Comm ents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong, China</td>
<td>CECID</td>
<td>Liang Peng</td>
<td>2003/01/09</td>
<td>Succeed</td>
<td>No warring, no problem.</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>FUJITSU</td>
<td>Liang Peng</td>
<td>2003/01/09</td>
<td>Failed</td>
<td>Number of payloads unmatches in SOAP header and</td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td>Organization</td>
<td>Name</td>
<td>Date</td>
<td>Result</td>
<td>Problems Description</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>---------------</td>
<td>--------------</td>
<td>----------</td>
<td>--------</td>
<td>-----------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>R.O.C</td>
<td>INFOTERIA</td>
<td>Liang Peng</td>
<td>2003/01/09</td>
<td>Failed</td>
<td>Number of payloads unmatches in SOAP header and SOAP attachment.</td>
<td></td>
</tr>
<tr>
<td>R.O.C</td>
<td>INNODIGITAL</td>
<td>Liang Peng</td>
<td>2003/01/09</td>
<td>Failed</td>
<td>Number of payloads unmatches in SOAP header and SOAP attachment.</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>NEC</td>
<td>Liang Peng</td>
<td>2003/01/09</td>
<td>Failed</td>
<td>Number of payloads unmatches in SOAP header and SOAP attachment.</td>
<td></td>
</tr>
<tr>
<td>Chinese Taipei</td>
<td>GCOM</td>
<td>Liang Peng</td>
<td>2003/01/09</td>
<td>Failed</td>
<td>Number of payloads unmatches in SOAP header and SOAP attachment.</td>
<td></td>
</tr>
</tbody>
</table>

1. **Result**: Succeed, Done with some problems, Failed
2. **Problems**: If you fail or have some problems during the test, describe the problems please.
3. **Action(or Comment)**: If you did some complementary actions for the test, describe your actions or comments please.

**Table 3**: Test report of other test participants’ dump data by SKLSE MSH
The test result of SKLSE dump data by other test participants’ MSH

<table>
<thead>
<tr>
<th>country</th>
<th>Organization</th>
<th>Tester</th>
<th>Test Date/Time</th>
<th>Result</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong, China</td>
<td>CECID</td>
<td></td>
<td>2003/01/09</td>
<td>Succeed</td>
<td>No warring, no problem.</td>
</tr>
<tr>
<td>Japan</td>
<td>FUJITSU</td>
<td></td>
<td>2003/01/09</td>
<td>Succeed</td>
<td>No warring, no problem.</td>
</tr>
<tr>
<td>R.O.C</td>
<td>INFOTERIA</td>
<td></td>
<td>2003/01/09</td>
<td>Succeed</td>
<td>No warring, no problem.</td>
</tr>
<tr>
<td>R.O.C</td>
<td>INNODIGITAL</td>
<td></td>
<td>2003/01/09</td>
<td>Succeed</td>
<td>No warring, no problem.</td>
</tr>
<tr>
<td>Japan</td>
<td>NEC</td>
<td></td>
<td>2003/01/09</td>
<td>Succeed</td>
<td>Number of payloads unmatches in SOAP header and SOAP attachment.</td>
</tr>
<tr>
<td>Chinese Taipei</td>
<td>GCOM</td>
<td></td>
<td>2003/01/09</td>
<td>Succeed</td>
<td>Number of payloads unmatches in SOAP header and SOAP attachment.</td>
</tr>
</tbody>
</table>

Result: Succeed, Done with some problems, Failed
Problems: If you fail or have some problems during the test, describe the problems please
Action(or Comment): If you did some complementary actions for the test, describe your actions or comments please
2.2 Online Feasibility Test

Online Feasibility Test Procedure

The test items for Online Feasibility test are T1-1-1 and T1-3-1 which are agreed by test participants. Test participants are divided into test pairs, and each test participant in test pair will send and receive message online by taking the role of sender and receiver in turns. Both sides should check the inspection items defined and report the result to each other after receiving the message successfully or failed.

SKLSE test Result of Online Feasibility Test

Test result from SKLSE perspective

<table>
<thead>
<tr>
<th>Partner</th>
<th>Test Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>country</td>
<td>organization</td>
</tr>
<tr>
<td>HK</td>
<td>China</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>Fujitsu</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td>Company 1</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Chinese Taipei</td>
<td>GCOM Cash</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>ROK Innodigital</td>
<td>jnamlee</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>ROK Innodigital</td>
<td>jnamlee</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>ROK KTNET</td>
<td>sangkki m78</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>ROK KTNET</td>
<td>sangkki m78</td>
</tr>
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<td></td>
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<tr>
<td>ROK KTNET</td>
<td>sangkki m78</td>
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</tr>
<tr>
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<td>sangkki m78</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 5: Test result from SKLSE perspective

<table>
<thead>
<tr>
<th>Partner</th>
<th>Test Result</th>
<th>Country</th>
<th>Organization</th>
<th>Tester</th>
<th>Test Item</th>
<th>My Role</th>
<th>Test Date/Time</th>
<th>Result</th>
<th>Problems</th>
<th>Actions (or Comments)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>HK</td>
<td>CECI D</td>
<td>CECID</td>
<td>T1-1-1</td>
<td>Sender</td>
<td>01/ 4 15:42</td>
<td>Succeed</td>
<td>No Error, No Warning</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HK</td>
<td>CECI D</td>
<td>CECID</td>
<td>T1-3-1</td>
<td>Sender</td>
<td>01/ 4 15:47</td>
<td>Succeed</td>
<td>No Error, No Warning</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Japan</td>
<td>Fujitsu</td>
<td>necebiot</td>
<td>T1-1-1</td>
<td>Sender</td>
<td>01/ 5 10:12</td>
<td>Failed</td>
<td>Value of type attribute of Service element was not set, PartyId and PartyId type attribute are different from CPA</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Japan</td>
<td>Fujitsu</td>
<td>necebiot</td>
<td>T1-3-1</td>
<td>Sender</td>
<td>01/ 5 10:21</td>
<td>Failed</td>
<td>Value of type attribute of Service element was not set, PartyId and PartyId type attribute are different from CPA</td>
<td></td>
</tr>
</tbody>
</table>

Test result from other test participants’ perspectives
<p>| | | | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Sender</strong></td>
<td><strong>Receiver</strong></td>
<td><strong>Date</strong></td>
<td><strong>Time</strong></td>
<td><strong>Result</strong></td>
<td><strong>Details</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1-3-1</td>
<td></td>
<td>01/10:47</td>
<td></td>
<td>Failed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1-1-1</td>
<td></td>
<td>01/09:42</td>
<td></td>
<td>Failed</td>
<td>HTTP error code 409</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>01/09:21</td>
<td></td>
<td>Done</td>
<td>with Problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PartyId and PartyId type attribute are different from CPA.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01/09:47</td>
<td></td>
<td>Failed</td>
<td>HTTP error code 409</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PartyId and PartyId type attribute are different from CPA.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01/09:32</td>
<td></td>
<td>Done</td>
<td>with Problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PartyId and PartyId type attribute are different from CPA.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01/11:12</td>
<td></td>
<td>Failed</td>
<td>1. We got 409 HTTP Response</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1. ‘PartyId’ element under ‘To’ element in the message received from SKLSE was wrong. 2. A value of ‘Content-ID’ in the message received from SKLSE have no braket (&lt; and &gt;). È right case: Content-ID : &lt;Payload-0&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01/11:21</td>
<td></td>
<td>Failed</td>
<td>1. We got 409 HTTP Response</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1. We got 409 HTTP Response</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01/11:47</td>
<td></td>
<td>Failed</td>
<td>1. We got 409 HTTP Response</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1. We got 409 HTTP Response</td>
</tr>
</tbody>
</table>

---

**Chinese Taipei**

GCOM Cash GCOM Johnny

---

**ROK**

Innodi jnamlee xukaél
<table>
<thead>
<tr>
<th>Country</th>
<th>Partner</th>
<th>Issue</th>
<th>Time</th>
<th>Result</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROK</td>
<td>KTNET</td>
<td>sangkki m78</td>
<td>T1-1-1</td>
<td>01/15 11:32</td>
<td>Failed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1. ‘PartyId’ element under ‘To’ element in the message received from SKLSE was wrong.\n2. A value of ‘Content-ID’ in the message received from SKLSE have no brackets (&lt; and &gt;). É right case: Content-ID : &lt;Payload-0&gt;</td>
</tr>
<tr>
<td>ROK</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>NEC</td>
<td>necebiot</td>
<td>T1-1-1</td>
<td>01/14 15:42</td>
<td>Failed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+ In T1-1-1, NEC’s message couldn’t be received by SKLSE’s msh</td>
</tr>
</tbody>
</table>
### Table 6: Test result from other test participants’ perspectives

<table>
<thead>
<tr>
<th>Test ID</th>
<th>Role</th>
<th>Time</th>
<th>Result</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1-3-1</td>
<td>Receiver</td>
<td>01/1</td>
<td>Failed</td>
<td>+ In T-1-1, a type attribute of Service element was missing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td></td>
<td>+ In T1-1-1, a type attribute and a content of PartyId were different from the values specified in CPA.</td>
</tr>
<tr>
<td></td>
<td>Sender</td>
<td>01/1</td>
<td>Failed</td>
<td>+ We didn’t try T1-3-1</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>15:47</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Receiver</td>
<td>01/1</td>
<td>Failed</td>
<td>+ We didn’t try T1-3-1</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>15:32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 3

Test Problems and Solutions

3.1 Test problems

Message Sending Problem

The test problems encountered during the test are listed as follows after detailed analysis for the test result.

All test participants except CECID (Fujitsu, GCOM, NEC, InnoDigital, KNET) cannot receive ebXML message sent from SKLSE for the reasons below (and the reason why CECID can receive the ebXML message from SKLSE is that we are using the same ebXML MSH system – Hermes MSH):

- FromPartyID value in an ebXML message sent from SKLSE cannot be changed, most of time it is the URI of the message sender.
- ToPartyID value in an ebXML message sent from SKLSE cannot be changed, most of time it is the URI of the message receiver.
- PartyType value in an ebXML message sent from SKLSE is missing, normally it is "ebIOT" (<tp:PartyId tp:type="ebIOT">)
- Service Type value in an ebXML message sent from SKLSE is missing, normally it is "anyURI" (<tp:Service tp:type="anyURI">)

Because the FromPartyID and ToPartyID values are the key information in CPA file, Receivers cannot receive an ebXML message from SKLSE, which cannot comply with the CPA file. But for the MSH system of CECID, it ignores this problem, so the message sending and receiving between SKLSE and CECID are successful.

Message Receiving Problem

SKLSE cannot receive correctly the ebXML message from all test participants except CECID (Fujitsu, GCOM, NEC, InnoDigital, KNET) for the reasons below (and the reason why SKLSE can receive the ebXML message from CECID is that we are using the same ebXML MSH system – Hermes MSH):

This is due to a bug in Hermes MSH version 0.9.2.0, which didn’t accept the payload content surrounded by bracket “< >”. This bug has been fixed in Hermes MSH version 0930.

3.2 Solutions

Solution for Sending Problems

Code Modification: We modified the Java source code SendPanel.java (locates in hk.hku.cecid.phoenix.msh.monitor.SendPanel) that is the main source file for creating the message Send Panel, and this panel control the entire ebXML message sending information.

Code modification places listed below with comments:
<table>
<thead>
<tr>
<th>Line No.</th>
<th>Original Code</th>
<th>Modified Code</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>237</td>
<td>fromPartyText.setEnabled(false);</td>
<td>// fromPartyText.setEnabled(false);</td>
<td>Comment this line in order to make the FromPartyID value can be changed</td>
</tr>
<tr>
<td>239</td>
<td>toPartyText.setEnabled(false);</td>
<td>// toPartyText.setEnabled(false);</td>
<td>Comment this line in order to make the ToPartyID value can be changed</td>
</tr>
<tr>
<td>702</td>
<td>msgHeader.addFromPartyId(fromPartyId);</td>
<td>msgHeader.addFromPartyId(fromPartyId, &quot;ebIOT&quot;);</td>
<td>PartyType value of FromPartyID is set as &quot;ebIOT&quot;, this values can also be set manually by sender in the Send panel.</td>
</tr>
<tr>
<td>703</td>
<td>msgHeader.addToPartyId(fromPartyId);</td>
<td>msgHeader.addToPartyId(fromPartyId, &quot;ebIOT&quot;);</td>
<td>PartyType value of ToPartyID is set as “ebIOT”, this values can also be set manually by sender in the Send panel.</td>
</tr>
<tr>
<td>706</td>
<td>msgHeader.setService(service);</td>
<td>msgHeader.setService(service, &quot;anyURI&quot;);</td>
<td>Service Type value in an ebXML message is set as “anyURI”, this values can also be set manually by sender in the Send panel.</td>
</tr>
</tbody>
</table>

Table 7: Code modification in SendPanel.java

Solution for Receiving Problems

This problem was solved in the new Hermes MSH release 0.9.3.0 as mentioned above. Note) Hermes MSH release 0.9.3.0 only works with Servlet Container - Tomcat 4.06
Chapter 4

Test after Corrections

4.1 Redo the pre-test

After the correction, so far, we have solved the problems as follows:

1.) We re-test all dump data from other test participants, and the results are all successful (on pre-test, all dump data except the one from CECID were all failed to be received by our MSH due to the "SOAP payload number problem").

2.) FromPartyID & ToPartyID value in an ebXML message sent from SKLSE can be set to be compatible with CPA file (on feasibility test, we can not change the ToPartyID value in the ebXML message sent from SKLSE)

3.) PartyType value in an ebXML message sent from SKLSE can be set to be compatible with CPA file (on feasibility test, the PartyType information sent from SKLSE was missing)

4.) Service Type value in an ebXML message sent from SKLSE can be set to be compatible with CPA file (on feasibility test, Service Type information sent from SKLSE was missing)

4.2 Redo the feasibility test

After the correction, we also took an online test with GCOM which is one of the feasibility test participants, the test items are the same as the feasibility test on 2003 January 14-15 including T1-1-1 and T1-3-1, GCOM and SKLSE can both send and receive ebXML message in a correct form, the test result are successful.
Chapter 5

Future Test Work

In this section, we will introduce the future test work in our plan.

5.1 Continuous work on Hermes MSH

1.) Since Hermes MSH only provides an example MSH Monitor for ebXML message sending and receiving, which is not powerful enough for advanced setting, such as setting of PartyType, Service Type and Role value manually. We will try to build a new MSH monitor according to our requirements by using the Hermes MSH java package.

2.) We have gotten the ebMS (ebXML message service) toolkit included in Interstage Application Server version 5.0 from Fujitsu Limited Cop. in the end of January 2003, and we have installed it in our lab server, so far it runs normally. We consider that Hermes MSH and Fujitsu ebMS toolkit are different implementation to ebMS specification rev 2.0, so we want to do some internal test inside the LAN of SKLSE to analyze the product features.

5.2 Cooperation with Fujitsu

Fujitsu Limited Cop. is the long-term and strategic partner of SKLSE in both research and academic prospective, and it provides great support to SKLSE in this eBiOT Asian test. We got the full package of Interstage Application Server version 5.0 from Fujitsu in January 25, 2003. We agreed on the test preparation schedule after discussion with Fujitsu technical staff in order to participate the 1st round online-test of eBiOT Asian test in February 20 - 21. Fujitsu provides SKLSE with the full support for the installation and deployment of Interstage Application Server version 5.0.

Test Preparation Schedule

1.) 02/03 - 02/05 : Install & Setup Interstage
test ebMS loopback communication (The Internal Test)
2.) 02/06 - 02/12: Test of receiving message dump from each vendor.  
   (Internal Test)

3.) 02/13 - 02/14: Test of sending and receiving to FUJITSU through Internet.

4.) 02/20 - 02/21: ebXML Asia test (1st online test)

And after the Asian ebIOT 1st round online-test, we will report our test result to Fujitsu and discuss with Fujitsu about the next step.
References


