
**DANGEROUS GOODS MANIFEST SUBMISSION
WITH EBXML MESSAGE SERVICE
(XMLDG)**

for

The MARINE DEPARTMENT



FREQUENTLY ASKED QUESTIONS

Version: 1.0

October 2003

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TABLE OF CONTENT

1	ABOUT XMLDG	1
2	XML SCHEMA & IMPLEMENTATION DOCUMENTS	1
3	MESSAGE EXCHANGE	2
4	NETWORKING	4
5	DEVELOPMENT	4
6	SUPPORT	5

1. ABOUT XMLDG

Q: What is the XMLDG system?

A: XMLDG service, implemented in accordance with OASIS ebXML Message Service (ebMS) V2 Standard, is provided by Marine Department (MD) of HKSARG to facilitate the system-to-system submission mode of Dangerous Goods Manifest in XML format electronically via Internet.

Q: What are the benefits of using XMLDG for Dangerous Goods Manifest submission?

A: The XMLDG service enables the submission end to directly generate from their backend computer systems the Dangerous Goods Manifests and send them to MD through the Internet. This can help to increase the efficiency by eliminating the manual data input efforts and eliminating the human typo.

Q: How to join XMLDG?

A: Interested parties who wish to join or obtain further information on XMLDG may contact:

The Dangerous Goods & Project Section, Marine Department
Tel. 28523085
Fax. 28158596
Email: pfdg@mardep.gov.hk

2. XML SCHEMA & IMPLEMENTATION DOCUMENTS

Q: What is the purpose of Dangerous Goods Manifest XML Schema Specification (SS)?

A: SS provides the XML schema definitions for the business documents to be exchanged in the process of Dangerous Goods Manifest submission.

Q: What are the business documents being exchanged in the project?

A: Currently, there are three types of documents involved in the XMLDG submission process, namely Dangerous Goods Manifest (DGM), Acknowledgement and Credential. DGM is the business document for agents to declare dangerous goods to HKSARG. Acknowledgement is the business

document for HKSARG to acknowledge the DGM submission. Credential contains user identifier and password for HKSARG to authenticate the sender of the DGM.

Q: Does the SS match with International Maritime Organization's (IMO) recommendation?

A: DGM specified in the SS is defined and specified according to the IMO's recommendation.

Q: What is the purpose of Implementation Instructions (II)?

A: II is a document that provides the instructions for shipping agents to implement their systems to use the XMLDG service provided by HKSARG through Marine Department. Interpretation and restrictions of the schema, networking configuration and ebXML messaging are covered in the document.

Q: What is the purpose of Technical Implementation Reference (TIR)?

A: TIR is a document that provides technical references on the implementation of the XMLDG project. It includes the deployment architecture, processing workflow and usage of XMLDG Vocabulary Library.

Q: What is XMLDG Vocabulary Library?

A: The XMLDG Vocabulary Library provides an XML binding framework for the XMLDG project. It maps each element in the XML schema specified in SS and II to a Java class. Each Java class provides getter and setter methods to manipulate, validate and parse the XML documents.

3. MESSAGE EXCHANGE

Q: What is ebXML Messaging Service(ebMS)?

A: ebMS provides the mechanism for packaging and transporting business documents in a standardized, secure and reliable manner. ebMS defines the header and the envelope for packaging one or multiple business documents, usually in XML format, into an ebXML message. The header and the envelope define the behaviour, such as reliable and secure messaging features, for the ebXML Message Service Handler (MSH) software used by two parties to send

and receive the message. The Version 2.0 of the ebMS is adopted in the XMLDG project.

For technical details about ebXML message services, please refer to the OASIS ebXML Message Services Specification Version 2 (<http://www.ebxml.org/specs/ebMS2.pdf>).

Q: What is Message Service Handler (MSH)?

A: MSH is a piece of software used to send and receive ebXML messages. In the XMLDG project, the MSH should be compliance with the OASIS ebMS V2 standard. Shipping Agents can choose any MSH software product that is compliceance with the OASIS ebMS V2 standard. An interoperability test on the MSH product between Shipping Agents and MD before production run. Hermes MSH is one of such products that passed the interoperability test with MD.

Q: What is Hermes Message Service Handler (MSH)?

A: Hermes is a MSH implementation. It is in compliance with the OASIS ebMS V2 standard. It is implemented by the Center for E-Commerce Infrastructure Development at the University of Hong Kong. It is released as an open-source project under the Academic Free License. For more details of Hermes MSH, please refer to <http://www.freebxml.org/msh.htm>.

Q: What are software and hardware requirements of Hermes MSH?

A: Hermes MSH requires Java Runtime Environment (JRE) 1.4 or above. The MSH needs a database to store the status of communication, to support resilience, reliable messaging, message tracking, etc. Hermes MSH runs on a servlet container.

Q: Which platforms are tested using Hermes MSH?

A: OS: Linux, Solaris, Windows 2000, and Windows XP Database: Oracle, MS SQL Server, PostgreSQL, JDataStore, and MySQL Application Server: Jakarta Tomcat, WebSphere, WebLogic, JBoss, and JRun

Q: What is the cost of Hermes MSH?

A: Hermes is an open-source project released under the Academic Free License. It can be downloaded at <http://www.freebxml.org/msh.htm>.

Q: Does Hermes MSH provide any administration or monitoring tool?

A: Supporting tools are provided for administrating and monitoring Hermes MSH. Hermes MSH Heartbeat Tool checks if Hermes MSH is alive. Hermes MSH System Commander sends administrative commands to MSH, such as suspension, backup, archiving and checking of database connection. Hermes MSH Webmin is a web interface for Hermes MSH administration. Some of the modules are the same as those provided by System Commander, like MSH maintenance, MSH information and message archive. Those tools can be found under XMLDG project website.

Q: How to drive Hermes MSH to send and receive messages?

A: A Java data handler should be implemented to send and receive messages to and from Hermes MSH through Java API calls.

Q: What is version of Hermes MSH currently using in XMLDG system?

A: Up to the time of compiling this document, XMLDG is using Hermes MSH version 0.9.3.1.

4. NETWORKING

Q: What is the network-setting requirement between Marine Department and Shipping Agent?

A: The messages are exchanged through the Internet using HTTP over IPSec protocol. Shipping agents using the XMLDG service should set up an IPSec VPN server to establish a gateway-to-gateway tunnel with the IPSec server in Marine Department.

5. DEVELOPMENT

Q: How to integrate Hermes MSH with my backend system?

A: It is assumed that there is a working database that contains all “ready to send” records. A data handler should be implemented to interact with the working database and Hermes MSH. It has no direct interaction with the backend system.

The recommended deployment mode is using one data handler, i.e. one process, to handle all sending and receiving requests. The data handler will run as a daemon process and it will continue polling the working database to check whether there are “ready to send” records. Hermes MSH invokes the data handler

when a message is received. The data handler then performs some business logics.

Q: What resources are required on the implementation?

A: In general, there are two program modules that need to be implemented.

One is data extraction module that will extract DG data from backend system to a working database based on some business logics. These logics can be varied from different shipping agents.

The second one is a data handler that responsible to send and receive ebXML message, and process XML document data content. Currently, a data handler is acting as a Hermes MSH Client, and it is only available in Java platform. There are some sample codes in the project website.

Q: Is it possible to test the XMLDG applications with Marine Department before production run?

A: Yes. There is a testing environment established in Marine Department. Interested parties can contact the Marine Department for detailed arrangements.

Q: Apart from technical aspects, what are the other critical success factors to watch out during implementation?

A: Shipping companies shall take the opportunities to re-design the related business processes in order to derive the full benefits and efficiency of the new system-to-system service delivery mode. Change management activities coupled with comprehensive training will certainly increase user buy-in.

6. SUPPORT

Q: What is the support arrangement?

A: The Marine Department will engage the necessary ongoing technical support services for the Hermes MSH software suite to ensure effective operations of the production service provision. However, any application development or maintenance efforts for interfacing with and integrating backend systems will be borne by the participating companies concerned.