



## Functional Description

## **Intended Audience**

### **Contents**

This document presents an overview of MessagePlus/Open, the business communication solution from Interscope and is intended to be read by business managers, system administrators and systems architects. More detailed information on specific topics can be obtained by contacting Interscope through any of the addresses on the final page of the document.

### ***INTRODUCTION***

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## Introduction

This paper introduces MessagePlus/Open, an enterprise messaging solution, provided by Interscope GmbH (INTERCOPE), a specialist enterprise messaging and application integration company with a 25-year history of providing mission-critical communications solutions.

With MessagePlus/Open, your company will be able to share critical business information among customers, suppliers and other business partners. MessagePlus/Open enables the intelligent routing of messages and transaction-related information between a wide range of communications systems and business applications, without necessarily requiring modifications to existing strategic business applications.

MessagePlus/Open is an enterprise messaging solution, which manages incoming and outgoing communication traffic on a massively scalable basis. Currently supported message types include fax, e-mail and SMS.

MessagePlus/Open is an open, standards-based technology that runs on IBM, Sun, Linux and Microsoft operating systems. It provides out-of-the-box integration with numerous enterprise applications (such as IBM Lotus Domino, Microsoft Exchange, IBM Content Manager and FileNet P8, SAP, etc) and protocols, and provides a powerful JAVA API to develop additional customized applications which can be perfectly adapted to specific business requirements.

The heart of MessagePlus/Open is RDBMS-based, leveraging the power and reliability of IBM DB2 or Oracle Database as its engine.

A Web client is included with the product for administrative tasks as well as to perform user functions.

***Share critical business information among customers, suppliers and other business partners.***

## Highlights

### ***Dramatic cost reductions.***

MessagePlus/Open enables information exchange between various applications and communication networks. It runs on several enterprise operating systems, integrates with major information processing systems, and allows the building of complex workflow scenarios to reflect specific business logic.

Outgoing messages (e-mail, fax or SMS) are sent directly from any MessagePlus/Open integrated application. Incoming messages are automatically distributed to databases, mail addresses, applications or devices.

The entire corporate message traffic is managed from one central database. The immediate effects of this technology are dramatic cost reductions and less time wasted in messaging operations, combined with the highest levels of availability and reliability.

Major highlights include:

### ***Highest scalability and availability.***

- ✓ Platform Independence  
MessagePlus/Open can be installed on the server platform of your choice: Linux on System z, IBM AIX, Sun Solaris, Microsoft Windows and Linux x86.
- ✓ Flexibility  
MessagePlus/Open is built on a completely modular architecture, which allows different components of one logical system to run on different computers, under different operating systems.
- ✓ Scalability  
MessagePlus/Open scalability enables it to support the communications needs of a growing business.
- ✓ Availability  
MessagePlus/Open is designed for business critical environments, and it's available 24 hours a day, 7 days a week.
- ✓ Consolidation  
MessagePlus/Open offers the ability to centralize and impose central control over all corporate messages traffic --- with maximum cost savings. This one stop shopping provides you with ONE product from ONE vendor.
- ✓ Efficiency  
Business processes can be improved by allowing MessagePlus/Open to manage your entire corporate messaging traffic, archive received messages into your document management system, route to mailboxes, printers, GSM devices, as well as applications, and deliver information that is specifically tailored to your customers, suppliers and partners. MessagePlus/Open provides you with the ability to seamlessly integrate workflow and business communications.
- ✓ Easy Implementation  
MessagePlus/Open is easy to install and implement. It can meet and accelerate your current timing plan. The installation and

### ***Efficiency and bottom line savings.***

customization can usually be completed and measured in days rather than weeks.

- ✓ Bottom Line Savings
  - Telephone cost (fewer fax lines and reduced transmission cost)
  - Infrastructure cost (equipment, software, maintenance, support)
  - Operational cost

- ✓ High Quality 24 / 7 Support  
INTERCOPE provides a round-the-clock help desk contactable via email or telephone for its mission critical products. A team of highly qualified and dedicated engineers provide first class service and problem solution within committed response times. This well-received support function has been in place for over 15 years.

***High quality support.***

## Product Features

### **In a Nutshell**

MessagePlus/Open is a universal, content-independent, and workflow-enabled communication platform for medium to large organizations. MessagePlus/Open provides connectivity for business applications through a wide range of communication channels across the entire enterprise. MessagePlus/Open enables effective electronic exchange of business information with customers and business partners. Furthermore MessagePlus/Open can bridge the gap of traditionally incompatible in-house systems and formats and importantly, it does this without necessarily requiring modifications to integrated base applications.

On the network side, MessagePlus/Open currently supports transmission and reception of the following message types:

- Facsimiles
- E-Mail
- SMS (short messages service)

Outgoing faxes, e-mail and SMS messages are directly sent from any application. Incoming messages can automatically be distributed to databases, mail addresses, Content Management folders, applications or devices. Various graphical formats (e.g. PDF, PS) and application specific formats (e.g. Microsoft Word, PowerPoint or Excel) are supported and the "MPForm" utility of MessagePlus/Open generates perfect graphical images from pure text documents.

Application integration is provided for virtually any application within the existing and future IT infrastructure of any organization – in particular for:

- All major E-Mail Systems, including Microsoft Exchange and IBM Lotus Notes
- Content Management, in particular IBM Content Manager and FileNet P8
- Output Management
- Input Management
- Middleware like IBM WebSphere MQ and DB2
- Enterprise Resource Planning ( SAP certified)
- Legacy Applications
- Customer Applications

***Effective electronic exchange of business information with customers and business partners.***

***Send faxes, E-mail and SMS directly from any application.***

***Broad scope of integration options.***

The following picture gives an overview of the basic communication and connectivity features of MessagePlus/Open:



## Communication Channels

### Traditional Fax

In medium and large-size enterprises today immense volumes of messages are often still handled on hundreds - even thousands - of isolated fax machines and LAN fax solutions. These manual procedures are accepted as being archaic, laborious and insecure. MessagePlus/Open can address all of these issues through its ability to offer complete integration of fax communication into any existing IT infrastructure.

Outgoing faxes are sent directly from any MessagePlus/Open integrated application. Incoming faxes are automatically distributed to databases, mail addresses, applications or devices.

***All fax protocols and industry standard boards.***

All protocols used for fax transmission worldwide are supported for sending and for receiving:

- Analogue lines
- DID lines
- ISDN BRI
- ISDN PRI (E1)
- T1

Industry standard fax boards from Dialogic are employed as network interfaces:

- Brooktrout boards
- Eicon boards

## **Real-Time Fax over IP implementation of MPO**

In MessagePlus/Open, real-time Fax over IP is implemented by exploiting the Brooktrout SR140 API. This API is a pure software based solution. No fax boards are required, only an Ethernet connection from the server running the MPO fax line class to the IP network through which fax calls are to be routed.

### ***No fax boards required.***

The SR140 API provides a mature implementation of the standards recommended by the Internet Engineering Task Force (IETF) such as the Session Initiation Protocol (SIP) (RFC 3261), the Session Description Protocol (SDP) (RFC 2327), H.323, MGCP (Media-Gateway-Control-Protocol) and the standards of the International Telecommunication Union (ITU) such as T.38 and T.30.

Based on this technology, MessagePlus/Open is compatible with any T.38 – T.30 gateway that meets these standards.

## **E-Mail (SMTP)**

In addition to the specific e-mail systems integration modules (Lotus Domino, MS Exchange, etc), MessagePlus/Open provides a SMTP (Simple Mail Transfer Protocol) interface that allows sending and receiving Internet e-mail messages.

### ***The e-mail integration reflects customer requirements***

The e-mail integration of MessagePlus/Open reflects customer requirements, which cannot (easily) be implemented via the standard e-mail systems. A typical application example is a customer who generates thousands of account statements each day using a mainframe batch process. Traditionally those statements have been printed, enveloped and sent as a letters by mail. This laborious process could be accelerated, secured and significant cost savings could be achieved by integrating the batch process with MessagePlus/Open, allowing many of the recipients to automatically receive the statements as e-mail messages.

### ***Easy to use application integration.***

No new software development is required and no new communication link to an e-mail system has to be administered and monitored. Furthermore the whole scope of formatting facilities offered by MessagePlus/Open is transparently available for e-mail recipients. Messages can be personalized and perfect graphical images can be generated from pure text messages. For e-mail recipients, these images can be delivered as e.g. PDF or HTML attachments instead of the usual TIFF format mandated by fax.

### ***Added value for incoming e-mail.***

Thus wherever messages are generated by applications instead of individual e-mail users, the e-mail functionality of MessagePlus/Open provides an easy and comprehensive solution for message formatting and delivery. And of course mixed recipient groups with fax and e-mail destinations are fully supported. Either the direct SMTP link to the Internet or existing e-mail systems like Lotus Notes/Domino or MS Exchange can be used as the delivery path.

MessagePlus/Open can also offer value-added services for the processing of incoming e-mail. E-Mail messages are frequently received in personal mailboxes although they should really be part of a business transaction, which is handled in an ERP, Content Management or workflow system. The content analysis capabilities of MessagePlus/Open allow such messages to

be categorized with regard to their business content, and to deliver them to the back office system under the right categories or index classes, which normally is not feasible using a pure e-mail system.

No special hardware is needed for E-Mail connectivity. The SMTP gateway connects to any standard SMTP MTA (Message Transfer Agent), which realizes the message transmission via the Internet or Intranet.

## **SMS**

Any MessagePlus/Open integrated application can send and receive SMS messages the same way faxes and e-mail messages are sent and received.

*Any integrated application can send and receive SMS messages.*

For small volumes MessagePlus/Open supports a SMS modem device (CEP CT63 Terminal).

For larger volumes MessagePlus/Open connects to a SMSC (Short Message Service Centre) through TCP/IP and supports all standard protocols such as e.g. CIMD2 or UCP.

## **Application Integration**

This chapter lists some of the major integration modules of MessagePlus/Open. For further integration options please contact Intercope

### **Email**

MessagePlus/Open integrates with all email systems through the standard protocol SMTP. This integration allow any email user or any application processing email to send and receive faxes and SMS messages just like email.

*Send and receive faxes and SMS just like email.*

For specific systems such as Microsoft Exchange or Lotus Notes additional capabilities are available providing additional functions such as access to external directories (Active Directory, Notes address books).

### **SAP**

Via the SAP RFC architecture outgoing faxes are received from the SAP application. Various formats and multiple attachments are supported. Transmission reports and incoming faxes are sent to any SAP application. The module can connect to several SAP systems and clients. The integration is SAP certified.

*SAP certified solution.*

### **Content Management**

The MP/O integration with IBM Content Manager allows received faxes and email messages to be automatically stored in specific item groups and workbaskets of CM. Outgoing documents can be directed to MPO using the workflow functions of CM workstation. Similar functions are available for IBM FileNet P8.

*IBM Content Manager and FileNet P8.*

## **Printing Systems**

An emulation of a standard HP network printer allows various printing systems to send outgoing messages to MessagePlus/Open. The control information such as e.g. a Fax or SMS number can then be included in the PCL data stream.

*HP printer emulation.*

Transmission notifications for print jobs can be forwarded to any connected system such as e.g. email addresses, or MQ destinations

## **File Integration**

Transmission orders (messages) can be easily generated from applications by writing them to a file in a specific directory.

*XML based file exchange.*

Transmission reports (confirmation of delivery) can be received by applications by reading a file in a specific directory. The same process is used and available for applications to receive Reception Reports (received messages and meta data).

All data exchanged through the file integration can be encoded in XML syntax in a very flexible way.

## **MQ Integration**

Transmission orders can be easily generated from applications by writing them to a MQ queue.

*Transmission orders, reports and received messages via MQ.*

Transmission reports can be received by applications by reading a MQ queue. The same process is used and available for applications to receive Reception Reports (received messages and meta data).

All data exchanged through the MQ integration can be encoded in XML syntax in a very flexible way.

## **RDBMS Interface**

Outgoing messages (transmission orders) can be simply generated from applications by writing them to an RDBMS table.

*DB2, Oracle and Microsoft SQL Server.*

Transmission reports can be received by applications by reading these from a table within an RDBMS.

Supported databases include IBM DB2, Oracle Database and Microsoft SQL Server.

## **The Webservice interface**

A message creation web service is provided in order to expand the possibilities to send faxes and receive status information in SOA oriented environments including a broad set of optional parameters. The results of such a transmission order can be obtained by a "GetStatus" operation.

*SOA interface*

## **The Java API**

MessagePlus/Open is a completely open system providing interfaces to implement content-specific applications and customized Web portals. The Java API provides access to all MessagePlus/Open objects and all defined

actions that may be executed upon those objects. The Java API can, for example, be used to send and receive messages and to control message processing. New versions of a message can be created, routing instructions issued, attributes of a message can be read, etc.

***Full access to all system facilities.***

The Java API has full database access to manipulate the MessagePlus/Open data objects without using the MessagePlus/Open server, through use of Java database connectivity (JDBC). This means that all aspects of content can be handled. Furthermore the API can be used to initiate instructions, which are processed by the MessagePlus/Open server.

The JAVA API is the most appropriate tool to build specific applications based on the MessagePlus/Open kernel, where full access to system facilities is required.

## System Management

MessagePlus/Open has one central control process, the monitor module, which starts, stops and controls the software modules in a MessagePlus/Open domain. The monitor module receives live heart-beat signals from each individual program. If a module should fail, it is automatically restarted.

***Central control process.***

An alert is forwarded to the monitor module for every exceptional event and stored in the central database, as is all data on system usage and other statistical information.

This data is accessed using MessagePlus/Open utilities. These include the line monitor as well as an alert viewer. These utilities provide administrators with a comprehensive user interface by which the entire system can be monitored. You are alerted automatically should any event occur which might require your attention, like line failure or critical disk space.

***Alerting and system control via SNMP***

Your requirement, on the other hand, may not be for proprietary tools, but a central point of control should monitor everything running in your network. This technology is also available: MessagePlus/Open Simple Network Management (SNMP) interface. MessagePlus/Open has a SNMP subagent with a worldwide registered Management Information Base (MIB). These components are used to integrate MessagePlus/Open into your standard System Management Application. All the functions of the above-mentioned monitor module thus become available to your central network management:

- You receive the MessagePlus/Open alerts as standard SNMP traps.
- You have access to a broad range of information by reading SNMP variables.
- You can actively control MessagePlus/Open by writing SNMP variables.

## Architecture

### Operating Systems

MessagePlus/Open is a completely open system in the sense that all system facilities can be integrated with and used by external applications. The second important aspect of “openness” is that MessagePlus/Open completely integrates into the existing and evolving IT infrastructure of any organization. Whatever the customer’s choice for a mission critical enterprise wide communication solution, MessagePlus/Open will integrate.

MessagePlus/Open is available under the following operating system environments:

- Linux for System z
- Linux x86
- IBM AIX
- SUN Solaris
- Microsoft Windows

***Multiplatform support.***

### High Availability Clustering

In various companies, MessagePlus/Open operates as a “mission critical application” where even temporary system failures cannot be accepted. In such environments permanent availability must be guaranteed, 24 hours a day, 365 days a year.

This is why MessagePlus/Open can be implemented for dedicated high-availability systems and why MessagePlus/Open runs on architectures like UNIX clustering solutions such as AIX High Availability Cluster Multi-Processing (HACMP), SUN Solaris Cluster or Microsoft Cluster Server (MSCS) / Windows Failover Clustering.

***Standard cluster solutions.***

### Virtualization

MessagePlus/Open can be installed and run in virtual machines provided by platforms such as VMware.

High availability solutions such as VMware HA are supported.

### Distributed Components

MessagePlus/Open is built on a completely modular architecture, which allows different components of one logical system to run on different computers under different operating systems. Typical examples are:

- Database server and formatting services on a high availability UNIX cluster
- Network interfaces under Windows
- Database server and formatting services on z/Linux
- SAP integration on AIX
- Rendering modules on Windows

***Multi- platform and regional distribution of components.***

Components can also be distributed geographically. For example:

- Central database services in New York
- Integration modules in New York, Paris, Berlin, Sydney

- Network interfaces in New York, Paris, Berlin, Sydney

Multiple domains can coexist in one network with distributed components and domains also combined in any constellation. This architecture can be customized to perfection, and adapted to any corporate network and organizational requirements - no matter how individual they may be.

***Vertical and horizontal scalability.***

MessagePlus/Open guarantees unlimited scalability with regard to processing power, formatting capabilities, throughput and the number of communication ports that may be required.

## **Object storage**

The entire core data of MessagePlus/Open is stored in Relational Database Management Systems (RDBMS) tables. Currently supported databases include DB2 and Oracle Database. For other RDBMS please contact Intercope.

Depending on the implementation of a specific RDBMS this will provide operational advantages like:

***All advantages of a standard database.***

- High availability data stores
- On-line backup facilities
- Disaster recovery

The RDBMS also gives highly flexible access to the data required under various selection criteria and overcomes the limitations of any proprietary file-based solution.

## **Directory synchronization**

MessagePlus/Open address books and user profiles can be synchronized with external directories through LDAP or other protocols.

## **Web client**

The client interface of MessagePlus/Open is based on Java Server Page technology (JSP). It can be used from any standard Web browser like Internet Explorer or Firefox.

***Browser based GUI and single sign on.***

The Web client extends to include end-user operational functionality as well as all administrative functions. A comprehensive document journal is accessible using the client - including a complete history log for each message. Naturally, documents may be generated, sent, routed etc., and address books and the user profiles can be maintained.

Standard Single Sign on Systems for user authentication are supported.

## Summary

### ***Fax, FoIP, Emal, SMS.***

MessagePlus/Open enables your organization to automate communications with customers, suppliers and other business partners. MessagePlus/Open is an advanced solution based on the latest software standards and technology specifically tailored to meet the requirements of all enterprises from the smallest to the very largest. Currently supported message types include fax, fax over IP, email and SMS.

### ***Sending and receiving messages by any application.***

MPO allows the sending and receiving of messages by virtually any current or future application in your IT environment. Generic integration modules are provided for file based interfaces, IBM WebSphere MQ, email systems and Web services. MPO seamlessly integrates with Enterprise Resource Planning Systems, Enterprise Content Management Systems, Capture and Output Management Solutions, and Multifunction Devices.

### ***Intelligent routing.***

Intelligent routing algorithms based on document analysis automatically provide the right information to the right person and business application. Rich rendering and communication functions enable distributed content delivery through Web applications, fax, email, SMS and printers.

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