



SMS 365, operator service MMS Messaging Error Codes

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Revision History

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1 Introduction

While MMS messages are, for the most part, delivered to their destination subscriber over 99% of the time, there are times when the message is interrupted during its transit. This can be caused by a variety of reasons – from issues in the radio link between the handset or originating device and the operator, between the originating operator and an inter-carrier messaging hub, with the content or format of the message, between the inter-carrier messaging hub and the destination operator, and so forth.

This is a complex ecosystem, so errors do occur. The purpose of this document is to outline frequent and not so frequent errors that are commonly seen for MMS and from the point of view of the Digital Interconnect's Inter-Carrier Messaging Hubs.

Error messages are visualized in the various reporting and analytics products that Digital Interconnect provides to its customers. Messages that are rejected by Digital Interconnect will also have various error codes as part of the rejection response.



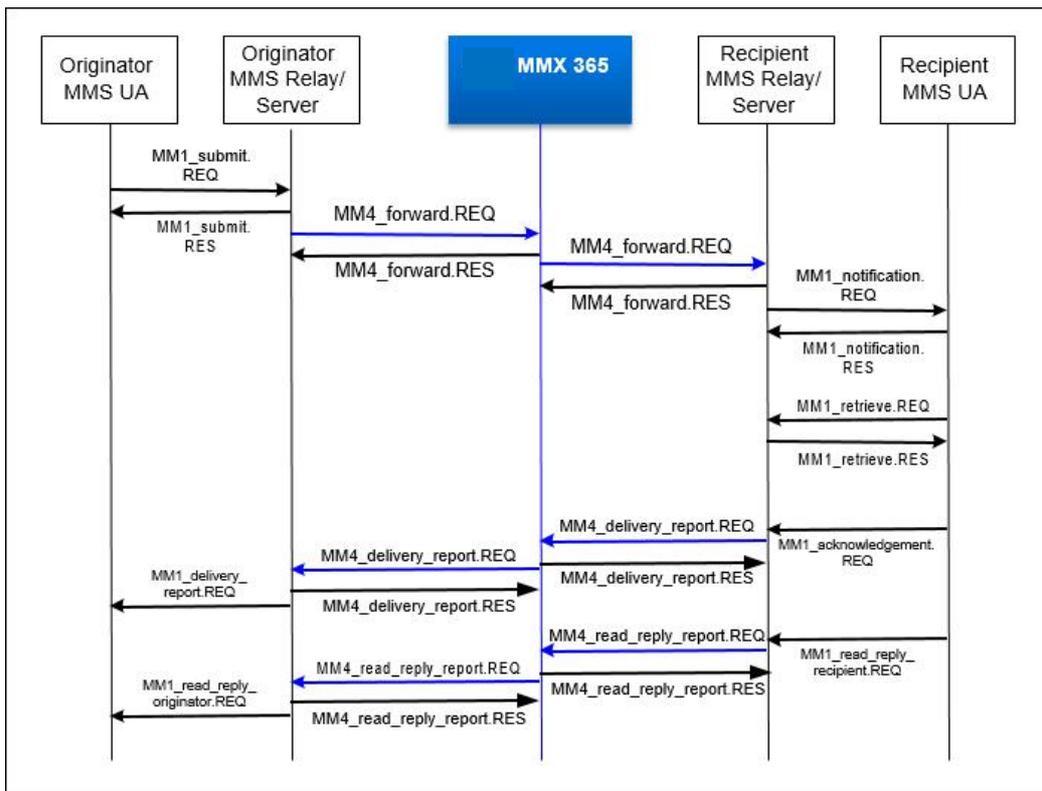
2 MMS Error Codes

The MMS error codes and messages are based on the 3GPP/3GPP2 standard MM4 response codes.

The figure, below presents an example abstract message flow when a multimedia message is sent from an originator MMS User Agent to a recipient MMS User Agent through MMX 365 (Digital Interconnect’s MMS interoperability solution). The scope of this figure is limited to abstract messages on reference points MM1 and MM4 only.

Both Delivery reports and Read-reply reports are sent to MMX 365 by the recipient MMS Relay/Server and recipient MMS User Agent, respectively.

Note: The MM4_forward.RES is not delivered to the originating MMSC until MMX 365 has confirmed if we have delivered to the destination MMSC. Otherwise, the appropriate error response (MM4 status code) will be delivered to the originating MMSC via the MM4_forward.RES.



The MM4 Status Codes are listed in the table, below:



X-Mms-Request-Status-Code	Description
OK	The corresponding request, and some or all of its contents, were accepted without errors.
Error-unspecified	An unspecified error occurred during the processing or reception of the corresponding request.
Error-service-denied	The corresponding request was rejected due to failure of authentication or authorization of the originating MMS Relay/Server.
Error-message-format-corrupt	An inconsistency with the message format was detected when the corresponding request was parsed.
Error-sending-address-unresolved	There were no MMS address (From, To, Cc) in its proper format, or none of the addresses belong to the recipient MMS Relay/Server.
Error-message-not-found	This status code is obsolete.
Error-network-problem	The recipient MMS Relay/Server was not able to accept the corresponding request due to capacity overload.
Error-content-not-accepted	The MMS content was not accepted due to size, media type, copyrights, or some other reason.
Error-unsupported-message	The recipient MMS Relay/Server does not support the corresponding request abstract message.

MMX 365 will also utilize internal error codes such as Delivery Error or NPA/NXX Not Found, etc. to designate specific (although agnostic to any type of SMS or MMS message) delivery situations.

Otherwise, any error designated as 'ERROR-' is a specific MM4 classified error code, from the list, above.



The following table outlines what a user might see on the MMX 365 Report Manager:

Mobile Originated - Errors		
Error Code	Error Code Desc	Carrier/Service
CAT_Delivery_Error	Delivery error	T-Mobile
ERROR-UNSPECIFIED	Unspecified error during processing or reception of request.	T-Mobile
CAT_Delivery_Error	Delivery error	Leap/Cricket
CAT_Delivery_Error	Delivery error	Undeliverable
ERROR-UNSPECIFIED	Unspecified error during processing or reception of request.	Leap/Cricket
Unknown	Unknown	Pine Telephone
CAT_Delivery_Error	Delivery error	Metro PCS
CAT_Delivery_Error	Delivery error	Alltel
CAT_Delivery_Error	Delivery error	Element Mobile
ERROR-SERVICE-DENIED	Request rejected due to authentication failure or invalid dest.	Pine Telephone
1100	NPA/NXX not found	Undeliverable
ERROR-NETWORK-PROBLEM	Recipient MMSC unable to accept request due to network errors.	Iowa Wireless
ERROR-UNSPECIFIED	Unspecified error during processing or reception of request.	Cingular (Orange)
ERROR-UNSPECIFIED	Unspecified error during processing or reception of request.	Viaero
ERROR-UNSPECIFIED	Unspecified error during processing or reception of request.	Einstein Wireless
ERROR-UNSPECIFIED	Unspecified error during processing or reception of request.	Rural Cellular
ERROR-UNSPECIFIED	Unspecified error during processing or reception of request.	Cellular One of East Central Illinois
ERROR-UNSPECIFIED	Unspecified error during processing or reception of request.	Verizon Wireless
ERROR-NETWORK-PROBLEM	Recipient MMSC unable to accept request due to network errors.	Pine Telephone
ERROR-NETWORK-PROBLEM	Recipient MMSC unable to accept request due to network errors.	Centennial Domestic
ERROR-NETWORK-PROBLEM	Recipient MMSC unable to accept request due to network errors.	MTPCS

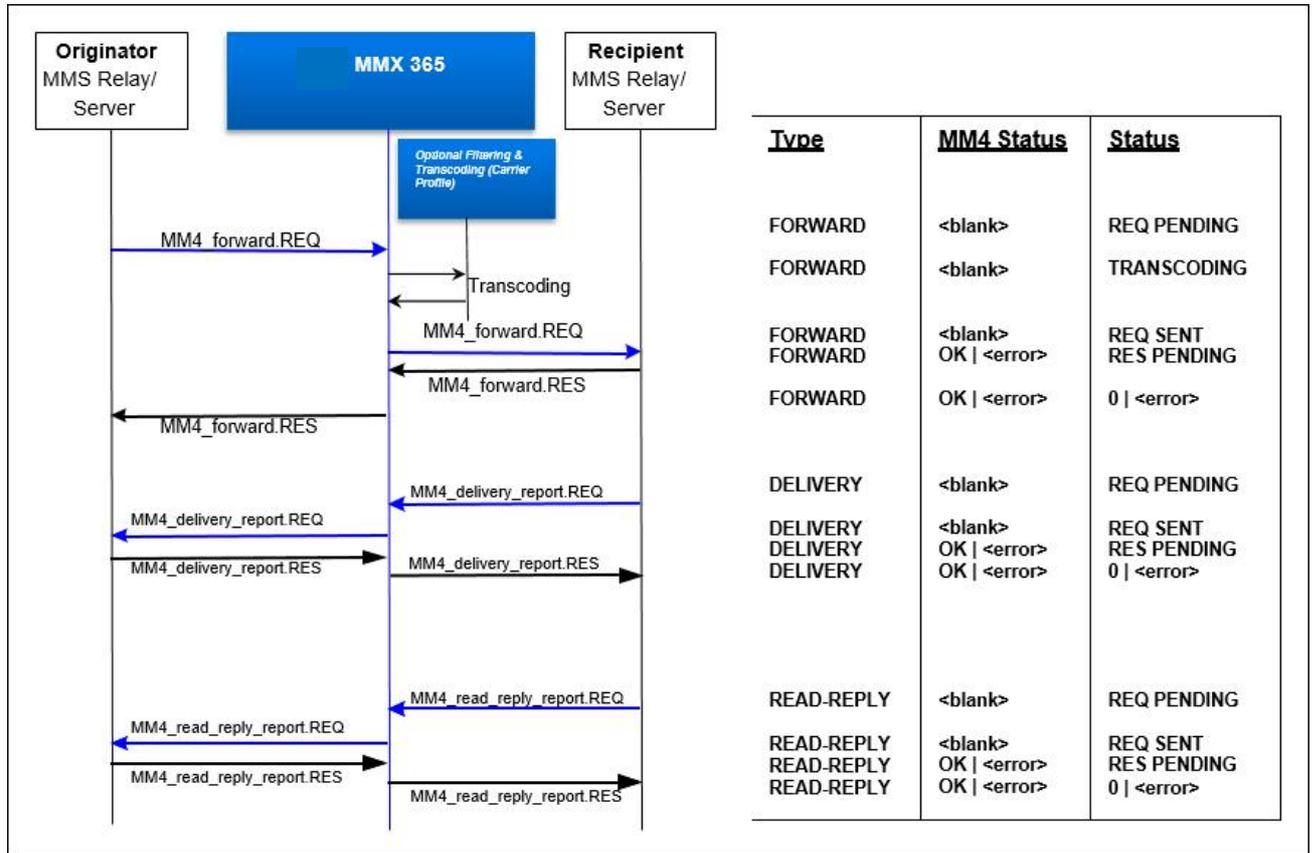
Note, the first error is a CAT_Delivery_Error for message(s) being sent to T-Mobile (the destination). In this case, the T-Mobile MMSC likely rejected the message for an unspecified reason. In reality, these are usually network issues that may result in trouble tickets for a particular carrier.

The ERROR-UNSPECIFIED is an MM4 response code meaning that the destination carrier could not process or handle the specific MMS message. It is fairly generic, meaning there could be a variety of issues causing this. Many times, it is an issue with the destination MMSC not being able to keep up with the rate of traffic.

In addition to these final dispositions, using MMX 365 Report Manager, MMX 365 provides visibility into the state of a message, according to message flow, as, at any moment, messages may be in some pending state, such as waiting for an MM4 Forward Response or other state.



The following diagram shows the possible states and status codes for individual messages (by using the **Messages** menu options of Report Manager):



In the reference diagram:

- **<blank>** - indicates that there is no entry in the field.
- **OK** – means the request and some (or all) of its contents were accepted without errors.
- **<error>** - will be one of the MM4 standard error codes, specifically, the value from the X-Mms-Request-Status- Code header of the MM4 response. The error string will be one of the status code strings (for example, ERROR-UNSPECIFIED, ERROR-SERVICE-DENIED, etc.). Typically, these errors originate from the *destination MMSC*, but they can also originate from MMX 365.

The following sections contains some examples that will better illustrate these states.



2.1 Error Message Examples

2.1.1 Example 1

In the examples shown below, we have two situations. In all cases, the MM4 message has been delivered to the destination MMSC, but in some cases, we see that the MM4_forward.RES (response) has not been received back from the destination MMSC (shown as REQ SENT). The Successfully MM4_forward.RES are shown with an MM4 Status of **OK** and a Status of **0**.

Note that the **Delivery Times** for the **Response** on the **Details** popup are blank, indicating no response has been received.

Delivery Times	
Request	
First Attempt	11:32:09
Delivered	11:32:09
Response	
First Attempt	
Delivered	

Type	MM4 Status	Status	Details
MO FORWARD	OK		Details
MO FORWARD		REQ SENT	Details
MO FORWARD		REQ SENT	Details
MO FORWARD	OK		Details
MO FORWARD	OK		Details
MO FORWARD		REQ SENT	Details
MO FORWARD	OK		Details
MO FORWARD	OK		Details

2.1.2 Example 2

In this example, we see a **RES PENDING** status for a message. This means that the MM4_forward.RES was forwarded back to the originating carrier by MMX 365, but we were unable to deliver it. The MM4 status in the response was shown as **OK**, so we know the message was successfully delivered.

MO FORWARD	OK	RES PENDING	Details
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In the associated **Message Detail** popup, we can see that the **Response** was received from the destination carrier and we tried to deliver, but have not yet delivered it. MMX 365 will retry the message after a period of time, so these type of statuses should normally be transient.



2.1.3 Example 3

In this example, the MMS Report Manager is showing a result where the destination number was not on the White List. The same result will be shown if a destination number is listed on a Black List. In this example, the message was denied by MMX 365 itself. Note that the destination carrier is listed as **Other**.

Other	MO	FORWARD	ERROR-SERVICE-DENIED	Error-service-denied	Details
Other	MO	FORWARD	ERROR-SERVICE-DENIED	Error-service-denied	Details
Other	MO	FORWARD	ERROR-SERVICE-DENIED	Error-service-denied	Details

Opening the **Details** popup reveals that the response was sent. In this case, the **Response** was generated by MMX 365 itself—the message never arrived at the destination carrier, since it was rejected by MMX 365.

Delivery Times	
Request	
First Attempt	04:07:57
Delivered	04:07:57
Response	
First Attempt	04:07:58
Delivered	04:07:58



2.1.4 Example 4

Subscribers will often try to send a message and mistype the recipient number. This is an example of a mistyped recipient phone number.

Other	MO FORWARD	ERROR-UNSPECIFIED	1100	Details
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In this example, the **1100** status code indicates **NPA/NXX Not Found**, and an MM4_forward.RES with a value of ERROR-UNSPECIFIED was sent back to the originator. Note that the response was sent by MMX 365 one second after receipt of the MM4_forward.REQ.

Delivery Times	
Request	
First Attempt	11:52:19
Delivered	11:52:19
Response	
First Attempt	11:52:20
Delivered	11:52:20

2.1.5 Example 5

This example illustrates a fully-completed transaction for the MM4_forward.REQ with a valid (with status of **OK**) MM4_forward.RES also received and sent back to the originator.

MT	FORWARD OK	0	Details
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It is desirable that the vast majority of the **Messages** entries look like this (either as MO or MT).