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MMHS Draft and Release using S/MIME
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Abstract

This document describes a procedure for when an MMHS message is composed by one user and is only released to the mail transfer system when one or more authorizing users authorize release of the message by adding the MMHS-Authorizing-Users header field. The resulting message can be optionally countersigned, allowing recipients to verify both the original signature (if any) and countersignatures.

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[1.](#) Introduction

In some secure environments email messages can't be released to the MTS (Mail Transfer System) and, thus delivered to recipients, unless they are authorized by one or more Releasing Officers. This document describes how this mechanism can be realized by an additional [[RFC5322](#)] header field and optionally using S/MIME [[RFC5750](#)] and [[RFC5751](#)].

This document describes a procedure for how an email message composed by one user can be released to the MTS when one or more authorizing users authorize and optionally countersign the message. The header communicates which users authorized the message. If signed, the resulting message allows recipients to verify both the original (if any) and counter S/MIME signatures. The list of authorizing users is specified in the MMHS-Authorizing-Users header field [Section 4](#). The original S/MIME signature generated by the sender (if any) should be unaffected by additional S/MIME countersignatures.

[2.](#) Conventions Used in This Document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [[RFC2119](#)].

The formal syntax uses the Augmented Backus-Naur Form (ABNF) [[RFC5234](#)] notation including the core rules defined in [Appendix B of RFC 5234](#) [[RFC5234](#)]. Terms not defined in this document are taken from [[RFC5322](#)].

3. Draft and Release procedure

The original email message to be sent may or may not include sender's S/MIME signature. It doesn't include the MMHS-Authorizing-Users header field. [[Is this true? Is there any use for specifying a value for the MMHS-Authorizing-Users header field before the message is countersigned?]]

The document to be sent is first submitted over SMTP [[RFC5322](#)]. The specific mechanism for how it arrives to authorizing user(s) is not specified in this document. One possibility is for the Submission MSA to redirect all email messages without the MMHS-Authorizing-Users header field and/or corresponding S/MIME countersignatures to a preconfigured mailbox that can be accessed by authorizing user(s).

Each user agent that is used by an authorized user has to perform the following steps:

1. Verify authenticity of the message. The exact mechanism to do that is out of scope for this document, but one example is by verifying the S/MIME signature and making sure that it matches the sender of the message, as described in [[RFC5750](#)] [[RFC5751](#)].
2. Check if the message already contains the MMHS-Authorizing-Users header field with the email address of the authorizing user. If yes, verify validity of the header field (for example by checking for S/MIME countersignature). If the validity of the MMHS-Authorizing-Users header field containing the email address of the authorizing user can be verified, go to step 5 below. Otherwise strip the MMHS-Authorizing-Users header field.

3. Allow the authorizing user to review content of the message. Some of the checks can be automated (for example search for keywords). If based on the check the authorizing user is happy to release the message to MTS (or to the next authorizing user, if multiple authorizations are required), the UA should optionally enable the authorizing user to add S/MIME countersignature. If the authorizing user wants to block the message, it can be discarded or returned to sender, and no further steps from this list should take place.
4. If there is an existing MMHS-Authorizing-Users header field containing the email address of the authorizing user, skip this step. Otherwise insert a new MMHS-Authorizing-Users header field (if absent) containing the email address of the authorizing user or append the email address of the authorizing user to the end of the existing MMHS-Authorizing-Users header field.
5. The (possibly) updated email message is either released to the MTS, or to the next authorizing user, as per email system configuration.

4. MMHS-Authorizing-Users header field

The MMHS-Authorizing-Users header field specifies the list of authorizing users that countersigned this email message (using S/MIME) before it was authorized for release to MTS. Each user is described by her/his email address.

The MMHS-Authorizing-Users header field specified in this document MUST NOT appear more than once in message headers.

```
MMHS-Authorizing-Users = "MMHS-Authorizing-Users:"  
                        [FWS] address-list [FWS] CRLF
```

```
address-list = <Defined in RFC 5322>
```

5. Updated MIXER mapping

This section updates MIXER mapping specified in [[RFC2156](#)].

5.1. Mapping from [RFC 5322](#)/MIME to X.400

In the absence of the MMHS-Authorizing-Users header field, From and Sender header fields are mapped to their X.400 equivalents as specified in [[RFC2156](#)].

If MMHS-Authorizing-Users header field is present:

1. The first From header field address is mapped to IPMS Heading.originator if there is no Sender header field and the remaining From header field addresses + the MMHS-Authorizing-Users header field address(es) are mapped to IPMS Heading.authorizing-users. If a Sender header field is present, the From header field address(es) and the MMHS-Authorizing-Users header field address(es) are mapped to IPMS Heading.authorizing-users.
2. The Sender header field (if present) is mapped to IPMS Heading.originator.

5.2. Mapping from X.400 to [RFC 5322](#)/MIME

Mapping from X.400 to Internet is controlled by whether or not a particular message is considered to be a military message. A message is considered to be a military message (as defined by ACP 123 [[ACP123](#)] and also specified in STANAG 4406 [[STANAG-4406](#)]) if there are any MMHS heading extensions present. Alternatively, this MAY be done by configuration (i.e. all messages can be considered to be military messages).

For non military messages, mapping from X.400 as specified in [[RFC2156](#)] is used.

For military messages, the following mapping is used:

1. IPMS Heading.originator is mapped to From header field.
2. The IPMS Heading.authorizing-users is mapped to MMHS-Authorizing-Users header field.

6. IANA Considerations

IANA is requested to add the MMHS-Authorizing-Users header field specified in [Section 4](#) to the "Permanent Message Header Field Registry", defined by Registration Procedures for Message Header Fields [[RFC3864](#)].

7. Security Considerations

TBD

8. Open Issues

Netnews Approved header field has the same syntax and semantics as the one described here. Should it be used (and be formally registered for email) instead?

Allow use of MMHS-Authorized-Users/Approved for specifying who should authorize release of the message (as opposed to just for recording of who authorized release so far)?

9. References

9.1. Normative References

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9.2. Informative References

- [RFC3864] Klyne, G., Nottingham, M., and J. Mogul, "Registration Procedures for Message Header Fields", [BCP 90](#), [RFC 3864](#), September 2004.
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Appendix A. Acknowledgements

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