



Safety & Risk Management Software

AUTOMATIC EMAIL ALERTS FUNCTIONAL OVERVIEW

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AQD Automatic Email Alerts Functional Overview

Introduction

The AQD Automatic Email Alerts module enhances the AQD system by providing a service that automatically generates and sends email alerts based on predefined system events (e.g. new eReports being raised, audits falling due, actions becoming overdue etc). Its purpose is to automate the distribution of information within an organisation. The system is designed to notify predefined groups of people via email of relevant updates in the system.

AQD Automatic Email Alerts is an optional module with AQD version 6.1. AQD Version 6.1 or higher must be in use before installing AQD Automatic Email Alerts.

The module consists of 2 elements:

- **AQD Alerting Configuration Utility:** The configuration utility is installed on an AQD system administrator's PC and provides tools for creating email templates that define the layout, content, recipients and rules for sending the email messages.
- **AQD Alerting Service:** The service is set up on a server (see Automatic Email Alerts Technical Overview for more information) to monitor the AQD database for relevant changes, and then generate and send email alerts via SMTP based on the templates defined.

Note: Most email systems such as MS Outlook Exchange and Lotus Notes provide a SMTP interface.

Email Message Types

There are 2 types of automatic email alerts supported by the system:

Update-based Alerts - based on updates to data (including new entries): Alerts based on updates are sent after specified information in the system has been changed, for example when a new eReport is submitted, or after an Action response has been entered. The message is generated as soon as the change is made.

Time-based Alerts - based on dates: Time-based alerts are sent at a predefined period before or after a target date stored in AQD. This allows for automatic alert messages to be sent out prior to and when a due date for an item (e.g. an Action) is reached. Time-based alerts are generated at a predefined frequency, such as on a daily basis.

Email Message Recipients

Alert recipients fall into 2 categories:

- A dynamic list that inserts the names of those people to whom the affected item is assigned (e.g. staff assigned to investigations/assessments and audits, or the person tracking an Action).
 - A pre-defined list of specific individual email addresses or email groups.
-

AQD Alerting Configuration Utility Functions

The following section describes the AQD Alerting Configuration Utility functions. Some of what is discussed assumes an existing knowledge of AQD.

AQD Maintain Alert Definitions

The 'AQD Maintain Alert Definitions' form is the centre of the AQD Alert Configuration Utility. This form is used to control which alerts should be raised and provides access to the Alert Template Editor, which is used to define the content of alert messages.

Using this form it is possible to set up a number of different messages, each having different recipients and content, for each alert condition. The list of alert messages that can be raised for each definition is shown in the 'Alert Mail Merge Templates' list at the bottom of the form when an alert definition is selected.

The 'Alert Mail Merge Templates' section is the means for accessing the Template editor to amend existing messages or for creating new message templates.

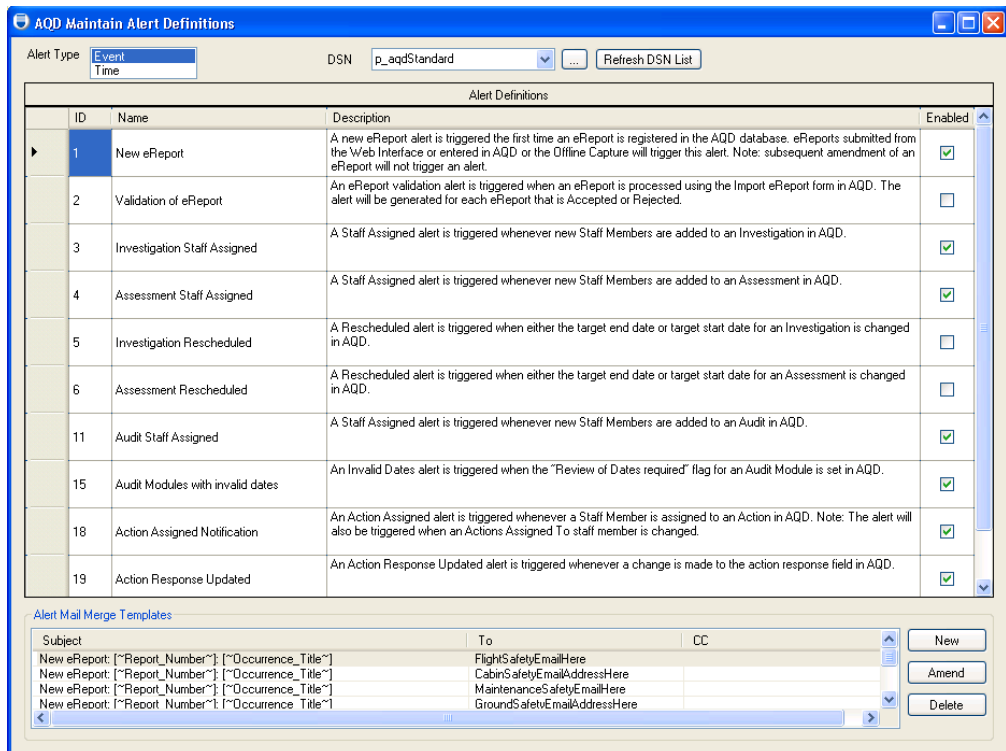


Figure 1 'AQD Maintain Alert Definitions' form - Event-based Alerts

Controlling the Alerts Raised

One of the primary purposes of the 'AQD Maintain Alert Definitions' form is to control the alert definitions to which the system will respond. This is achieved by enabling or disabling definitions in order to provide the desired alert messages:

- When an alert definition is enabled, an alert message will be sent when specified criteria are met (e.g. when an Audit is assigned to a staff member, or an Action Due Date is reached).
- When a definition is disabled, the system will not raise an alert for the specified condition.

AQD Automatic Email Alerts has predefined alert definitions that relate to specific conditions in the main AQD system. The full list of alert definitions is broken into event-based alerts and time-based alerts (refer to Appendix 1):

- Event-based alerts are raised as soon as data is changed in the system (e.g. when a new eReport is submitted).
- Time-based alerts are raised based on dates stored in the system (e.g. overdue actions).

Two types of Time-based alert are provided: warning alerts and overdue alerts. Warning alerts are raised when a configurable number of days before the target date is reached, while overdue alerts are sent on the day the due date is reached.

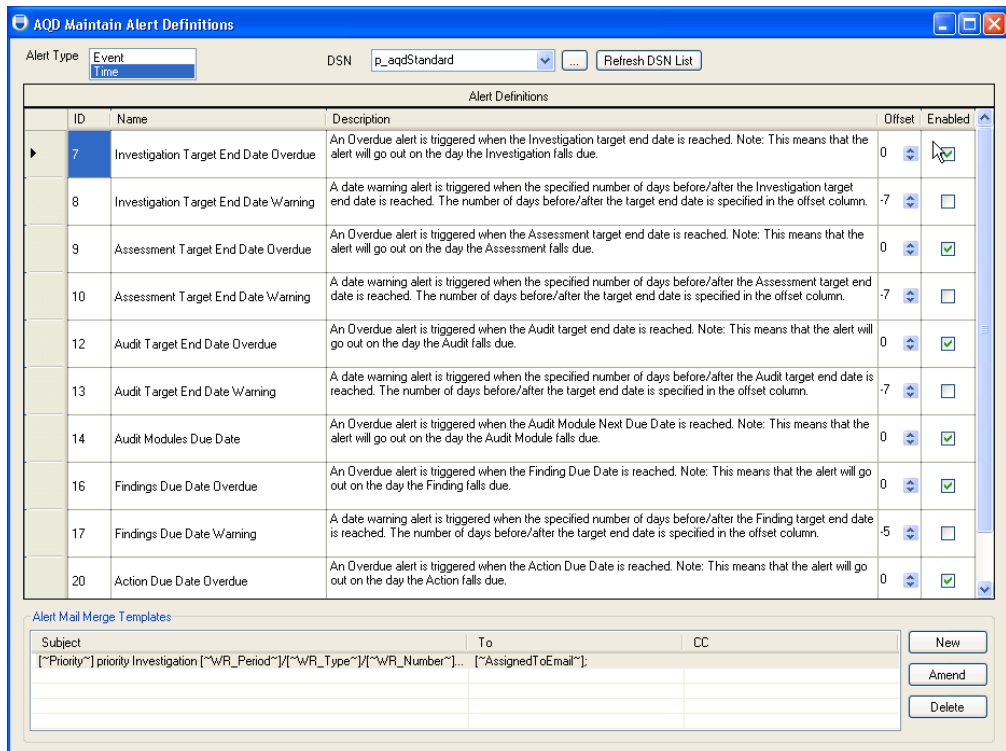


Figure 2 'AQD Maintain Alert Definitions' form - Time-based Alerts

AQD Alerting Template Editor

The AQD Alerting Template Editor is used to define the template that defines the content of the email messages that will be sent by the AQD Alerting Service. The Editor provides the ability to control 3 main aspects of the alert messages:

1. The message recipients (who will receive the message).
2. The content of the subject line and message body.
3. Any distribution rules that define certain conditions that must be met before the message is sent.

Message templates are created by entering a combination of static text and dynamic Tags. The dynamic Tags are replaced by the actual data recorded in AQD when the alert message is generated before sending. In this way the content of the message and recipients can be dynamically controlled by the system content.

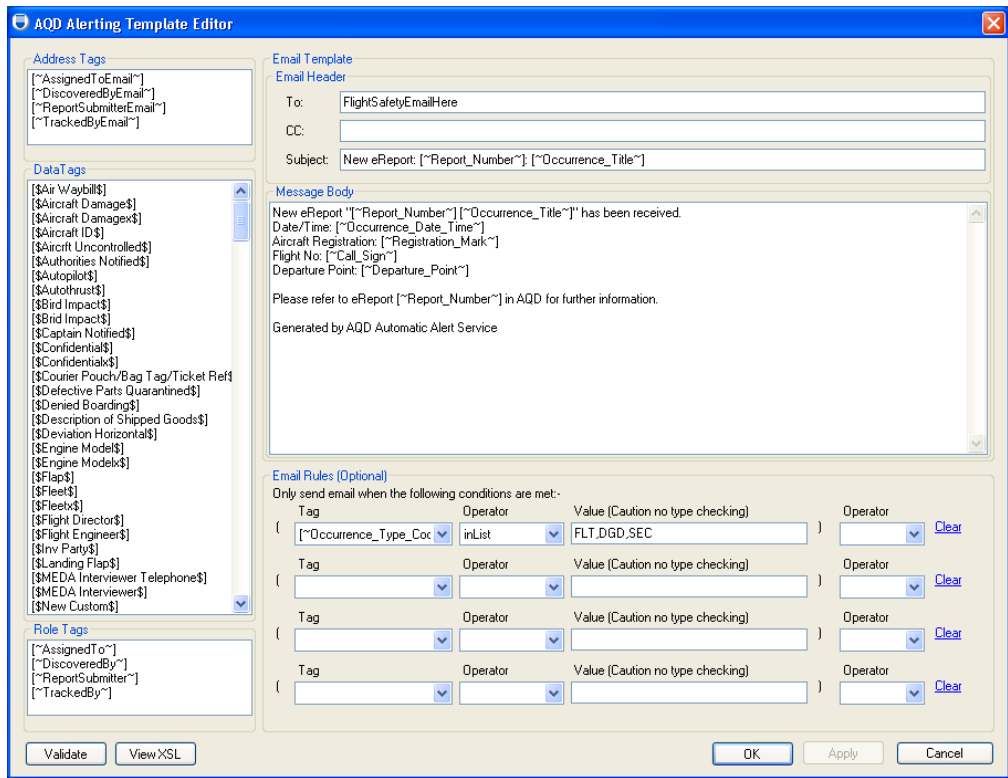


Figure 3 'AQD Alerting Template Editor' form

Specifying Message Recipients

Recipients of a message can be defined in two ways:

1. Type the full email addresses of those people who should receive the message into the 'To:' and/or 'CC:' field of the message template.
2. Drag one of the Address Tags provided to the 'To:' and/or 'CC:' fields.

Note: When an address tag is used, the tag is replaced by the name contained in the corresponding field in the system when the message is generated (e.g. the [~ReportSubmitterEmail~] address tag will be replaced by the content of the Originator field on the eReport).

In order to resolve names to email addresses that the system can use to send the message the following options are available:

- Resolution against people in the AQD Organisation Structure: Requires entry of email address against staff members in the Organisation Structure.
- Resolution against AQD Web User entries: Requires entry of email address against web users.
- Resolution against Active Directory users.
- Domain name substitution: This simply adds a specified domain name (e.g. @superstructuregroup.com) to the end of the name provided before sending the message.

Note: A cascade option is also provided that will try each method in succession until a match is found.

Specifying Message Content

In order to define dynamic message content a combination of static text and dynamic Data and/or Role Tags can be used in the Subject line or Message body fields.

The Data and Role Tags can only be used in the Subject line or Message body fields, and are replaced by the content of the fields when the message is generated.

Note: The ability to embed links to the associated item in alert messages has not been provided as they could potentially cause a breach of an organisation's IT security policies.

Distribution Rules

Email rules can be created to control distribution of the messages. The purpose of the rules is to define specific conditions that must be met before the message is sent. If the conditions are not met by the data in the associated item (e.g. eReport or Action) then the message will not be sent.

Rules are created by selecting a field from the Tag combo box, then specifying the information that the field should contain before the message is sent.

Note: In this way it is possible to create a message that is only sent to a fleet manager when an eReport relating to their fleet is submitted, or send a message to a department manager when a High risk Finding is due.

AQD Alerting Service

The AQD Alerting Service is a server-side component that monitors the AQD system, generating and sending messages when an alert condition is met. This service must run continuously for alert messages to be sent.

Alert Processing

Central to the AQD Alerting Service is an alert queue, into which entries are inserted from two sources:

- Event-based triggers, and
- Time-based alerts.

Note: In order to determine when Time-based alerts need to be raised the AQD Alerting Service reviews the state of all applicable due dates in the system at a predefined time (by default this occurs once a day, but can be customised).

The AQD Alerting Service then processes the alert queue at a predefined interval (determined by configuration) to identify any new entries. When a new entry is found the service generates an email message based on the corresponding email template and applies the distribution rules before sending the message.

Appendix 1 – Alert Definitions

Alert Definitions in the Standard Configuration

Auto Alert Triggers (Multiple emails can be defined for each trigger)	Description
Event-based Alerts	
New eReport Raised	A new eReport alert is triggered the first time an eReport is registered in the AQD database. eReports submitted from the Web Interface or entered in AQD or the Offline Capture will trigger this alert. Note: subsequent amendment of an eReport will not trigger an alert.
Validation of eReport	An eReport validation alert is triggered when an eReport is processed using the Import eReport form in AQD. The alert will be generated for each eReport that is Accepted or Rejected.
Investigation Staff Assigned	A Staff Assigned alert is triggered whenever new Staff Members are added to an Investigation in AQD.
Assessment Staff Assigned	A Staff Assigned alert is triggered whenever new Staff Members are added to an Assessment in AQD.
Investigation Reschedule	A Rescheduled alert is triggered when either the target end date or target start date for an Investigation is changed in AQD.
Assessment Reschedule	A Rescheduled alert is triggered when either the target end date or target start date for an Assessment is changed in AQD.
Audit Staff Assigned	A Staff Assigned alert is triggered whenever new Staff Members are added to an Audit in AQD.
Audit Rescheduled	A Rescheduled alert is triggered when either the target end date or target start date for an Audit is changed in AQD.
Audits modules with invalid dates	An Invalid Dates alert is triggered when the Review of Dates required flag for an Audit Module is set in AQD.
Action Assigned Notification	An Action Assigned alert is triggered whenever a Staff Member is assigned to an Action in AQD. Note: The alert will also be triggered when an Actions Assigned To staff member is changed.
Action Response Updated	An Action Response Updated alert is triggered whenever a change is made to the action response field in AQD.
New Occurrence	An acknowledgment e-mail alert to the originator is triggered when a hard-copy occurrence report is entered by Data Entry personnel and given an Occurrence number. Note: subsequent amendment of an Occurrence will not trigger an alert.
Occurrence Updated	An e-mail alert is sent when an occurrence has changed.
Action Due Date Changed	An e-mail alert is sent when an action has its Due Date changed
Time-based Alerts	

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Auto Alert Triggers (Multiple emails can be defined for each trigger)	Description
Investigation Target End Date Overdue	An Overdue alert is triggered when the Investigation target end date is reached. Note: This means that the alert will go out on the day the Investigation falls due.
Investigation Target End Date Warning	A date warning alert is triggered when the specified number of days before/after the Investigation target end date is reached. The number of days before/after the target end date is specified in the offset column.
Assessment Target End Date Overdue	An Overdue alert is triggered when the Assessment target end date is reached. Note: This means that the alert will go out on the day the Assessment falls due.
Assessment Target End Date Warning	A date warning alert is triggered when the specified number of days before/after the Assessment target end date is reached. The number of days before/after the target end date is specified in the offset column.
Audit Target End Date Overdue	An Overdue alert is triggered when the Audit target end date is reached. Note: This means that the alert will go out on the day the Audit falls due.
Audit Target End Date Warning	A date warning alert is triggered when the specified number of days before/after the Audit target end date is reached. The number of days before/after the target end date is specified in the offset column.
Audits Modules Due Date	An Overdue alert is triggered when the Audit Module Next Due Date is reached. Note: This means that the alert will go out on the day the Audit Module falls due
Finding Response Due Date Overdue	An Overdue alert is triggered when the Finding Response Date is reached. Note: This means that the alert will go out on the day the Finding Response falls due
Finding Response Due Date Warning	A date warning alert is triggered when the specified number of days before/after the Finding Response date is reached. The number of days before/after the Response date is specified in the offset column.
Action Due Date Overdue	An Overdue alert is triggered when the Action Due Date is reached. Note: This means that the alert will go out on the day the Action falls due
Action Due Date Warning	A date warning alert is triggered when the specified number of days before/after the Action target end date is reached. The number of days before/after the target end date is specified in the offset column.
Recheck Action Due Date Overdue	An Overdue alert is triggered when the Action recheck due date is reached. Note: This means that the alert will go out on the day the Action falls due. This template applies to Actions in RECHECK status only.

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Auto Alert Triggers (Multiple emails can be defined for each trigger)	Description
Recheck Action Due Date Warning	A date warning alert is triggered when the specified number of days before/after the Action recheck due date is reached. The number of days before/after the recheck due date is specified in the offset column.
Audit Target Start Date Warning	A date warning alert is triggered when the specified number of days before/after the Audit target start date is reached. The number of days before/after the target start date is specified in the offset column.
Audit Target Start Date Overdue	A Date Warning alert is triggered when the Audit Target Start date is reached. The alert will be sent on the day the Audit is due to start.

Alert Definitions for ASAP Module

Auto Alert Triggers (Multiple emails can be defined for each trigger)	Description
Event-based Alerts	
Event Review Staff Assigned	A Staff Assigned alert is triggered whenever new Staff Members are added to an ASAP Event Review in AQD.
Event Review Rescheduled	A Rescheduled alert is triggered when either the target end date or target start date for an Event Review is changed in AQD.
Time-based Alerts	
ERC Review Target End Date Overdue	An Overdue alert is triggered when the ERC Review target end date is reached. Note: This means that the alert will go out on the day the ERC Review falls due.
ERC Review Target End Date Warning	A date warning alert is triggered when the specified number of days before/after the ERC Review target end date is reached. The number of days before/after the target end date is specified in the offset column.

Alert Definitions for Risk Module

Auto Alert Triggers (Multiple emails can be defined for each trigger)	Description
Event-based Alerts	
Risk Review Staff Assigned	A Staff Assigned Alert is triggered whenever new staff members are added to a Risk Review.
Submitted Risk Feedback Modified	An Alert is triggered when feedback of a submitted risk has been modified.
Submitted Hazard Feedback Modified	An Alert is triggered when feedback of a submitted hazard has been modified.
Risk Level Change	An Alert is triggered when a Risk Level is changed and moves to a Risk Level being monitored.
Time-based Alerts	
Risk Review Target End Date Warning	A date warning alert is triggered when the specified number of days before/after the Risk Review target end date is reached. The number of days before/after the target end date is specified in the offset column.
Risk Review Target End Date Overdue	An Overdue alert is triggered when the Risk Review target end date is reached. Note: This means that the alert will go out on the day the Risk Review falls due.
Risk on Risk Register periodic review warning	A date warning alert is triggered when the specified number of days before/after the Risk Next Review date is reached. The number of days before/after the Next Review date is specified in the offset column.
Risk on Risk Register periodic review Overdue	A date warning alert is triggered when the Risk Next Review date is reached. Note: This means that the alert will go out on the day the Risk falls due.
Hazard on Hazard Register periodic review warning	A date warning alert is triggered when the specified number of days before/after the Hazard Next Review date is reached. The number of days before/after the Next Review date is specified in the offset column.
Hazard on Hazard Register periodic review Overdue	A date warning alert is triggered when the Hazard Next Review date is reached. Note: This means that the alert will go out on the day the Hazard falls due.

Alert Definitions for Compliance Module

Auto Alert Triggers (Multiple emails can be defined for each trigger)	Description
Event-based Alerts	
Compliance Evidence Entry –status changed	A Compliance Evidence Status changed Alert is triggered whenever the status is changed on a Compliance Evidence Entry and for each Compliance Evidence Entry change. This alert can result in numerous emails being sent.
Compliance Auto Status Changed	Reserved for Future Use. This will be an improvement separating manual edits of status to auto changes of status from system processes. This alert will be able to group altered Entries to reduce email.
Time-based Alerts	
Legislation Expiry warning	An Alert is triggered when a Legislation Title is nearing its expiry date.
Legislation Expired notification	An Alert is triggered when a Legislation Title has expired.
Document Expiry Warning	An Alert is triggered when a Document Title is nearing its expiry date.
Document Expired notification	An Alert is triggered when a Document Title has expired.

Appendix 2 – AQD Version 7 Enhancements

Enhancements

Our Ref	Description
Multiple	Alerts added for ASAP module
7487	New alert templates for Audit Start Date (Warning and Overdue)
Multiple	Alerts added for Risk Module
7143	New Template for “Occurrence Entered”
7019	Changed logic for alert processing on Recheck Actions (new alert for rechecks, exclude rechecks from existing alert)
6849	New Alert for Action Due Date rescheduled
7414	Added Involved Party fields to the “New e-report”, “Validation of E-report” and the new “Occurrence Entered” alerts.
6837	New alert definition “Occurrence Updated”
Multiple	Clarified wording on alert templates
Multiple	New alerts added for Compliance Module
7562	For occurrence data fields – using the “label” of the field, rather than the field name, in the Template Editor.
7142	Write log entries when alert e-mails sent (system wide)
6781	New Configuration Option to allow use of values entered into a data field as recipient address
7560	Show Template Name in Template Editor title
6120	Resolution of [-ReportSubmitterEmail~] Address tag: new [-Originator~] tag
7639	Copy Template button added
7140	Template Editor: Behaviour with new lines in template improved

Faults Fixed

Our Ref	Description
7640	Crashes at startup if problems encountered connecting to AQD database
6214	Alert processor crashing on empty templates
6323	ORACLE: Alerting Service: Messages fail when there is a '&' in the message template
6322	Alerting Template Editor: Not enforcing max allowable length for Oracle resulting in errors if message too long
6124	Alerting Utility: Cursor positioned to end of tag when dropping tags in to a message