MIX SUBMISSION

Issue 1440 - Mix Submission Enhancement Specification

This specification covers new functionality for generation of Mix Submission reports in QESTMix. These are used when a customer makes a request for a product with certain requirements, and there is a need to propose a suitable product that will meet these requirements.

Project:	42003
System:	QESTMix
Author:	Lief Martin
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DOCUMENT CONTROL

Date	Author	Revision	Change Reference
05-Dec-05	Lief Martin	1.0	Original Document
16-Jan-06	Lief Martin	1.1	Several changes – added more detail where required.

RELATED DOCUMENTATION

Name	Location	Details
D086 Mix Submission Spec.doc	\\adls0003\Documents\Customer\Active\AURMX - Readymix Holdings\42003 National System\Specifications\D086 Mix Submission Spec.doc	Functional Spec, as submitted by AURMX
D086 Mix Submission Spec_Attachment.doc	\\adls0003\Documents\Customer\Active\AURMX - Readymix Holdings\42003 National System\Specifications\D086 Mix Submission Spec_Attachment.doc	Attachment to functional spec, as submitted by AURMX

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1. Business Requirements

1.1 Overview

This enhancement is needed for the submission of concrete mix designs to customers and specifiers, for pre approval of proposed mixes prior to the supply of concrete to a project. Projects generally have specified criteria for performance-based characteristics and/or prescription based criteria in the concrete mix design.

2. Functional Requirements

2.1 Overview

This section covers the functional changes required in QESTMix. The bulk of the new functionality is in a completely new control, so there should be very little impact on the existing screens in QESTMix.

2.2 Additional Material Properties

Materials need to be associated with a specific source (e.g. a quarry), and a compliance specification. This indicates a standard specification to which the material can be expected to comply. (This is different from the internal 'Target' grading, which may have a tighter constraint on the acceptable range).

Caption	FieldName	Type/Length	Format/Entry Mode
Source	SourceName	String / 50 chars	"" / text-box
Compliance Specification	ComplianceSpecification	String / 50 chars	"" / text-box

Both of these fields will be able to be looked up from the QESTLab materials list if they have already been entered, or can be entered/overridden on the materials screen in QESTMix. Note that the "compliance specification" is a new field for QESTLab, and is not be available with the current release.

2.3 Changes in the QAC

2.3.1 Electronic Signatures for users

Also implied by the sample report is that there will be a need to include a user signature on the report. This involves adding appropriate user rights to QESTMix, and some changes to the QESTMix Users. This functionality has been previously implemented in QESTLab. The main user interface change is that there needs to be a way of specifying an electronic signature for the QESTMix user.

There are some additional details that will need to be specified on a per user basis. These are the address and phone number details for their office. These details appear on the top-right corner of the mix submission report.

2.3.2 QESTMix Company Logo

The company logo needs to be set on a once off basis for the QESTMix package. This will be set in the QAC options, and will appear in the top-left corner of the mix submission report.

2.4 Mix Submissions area

Mix submissions are a completely new area. In many cases, they will be associated with an established design, however, they may also be associated with a completely new design. A mix submission has two parts. The first is a set of data fields, and the second is a reportable format, which can be saved to PDF, printed directly, or emailed to a client.

It is intended that both of these will be available from a single node in the QESTMix tree, with the data entry and the report on separate tabs. When the mix submission is first added, the data entry tab will be opened when the mix submission node is clicked. Once the mix submission report has been "signed", however, then the report tab will become the default.

2.4.1 Add Mix Submission

A new button will be added to the toolbar "Add Mix Submission". This will pop-up a dialog in which the proposed mix (on which the submission is to be based) can be selected. Where possible, these fields will be defaulted based on the previously selected node in the QESTMix tree (i.e. if a product is currently selected, the dialog will have the product and plant default to the appropriate product).

When the mix submission is added, several of the fields can be automatically populated based on the mix on which the mix submission is based. These include many of the mix specification details, along with the mix submission number.

2.4.2 Mix Submission Numbers

Mix submissions need to have a unique identifier for the purpose of tracking and retrieval. We will use the database generated identity field to provide this (a sequential number), and prefix it with the plant code. This will be generated when the mix submission is added to the system (i.e. when the 'ok' button is clicked on the "Add Mix Submission" dialog).

The format will be: *pppp-nnnnnnnn*

pppp = the plant code (as entered in QESTMix)

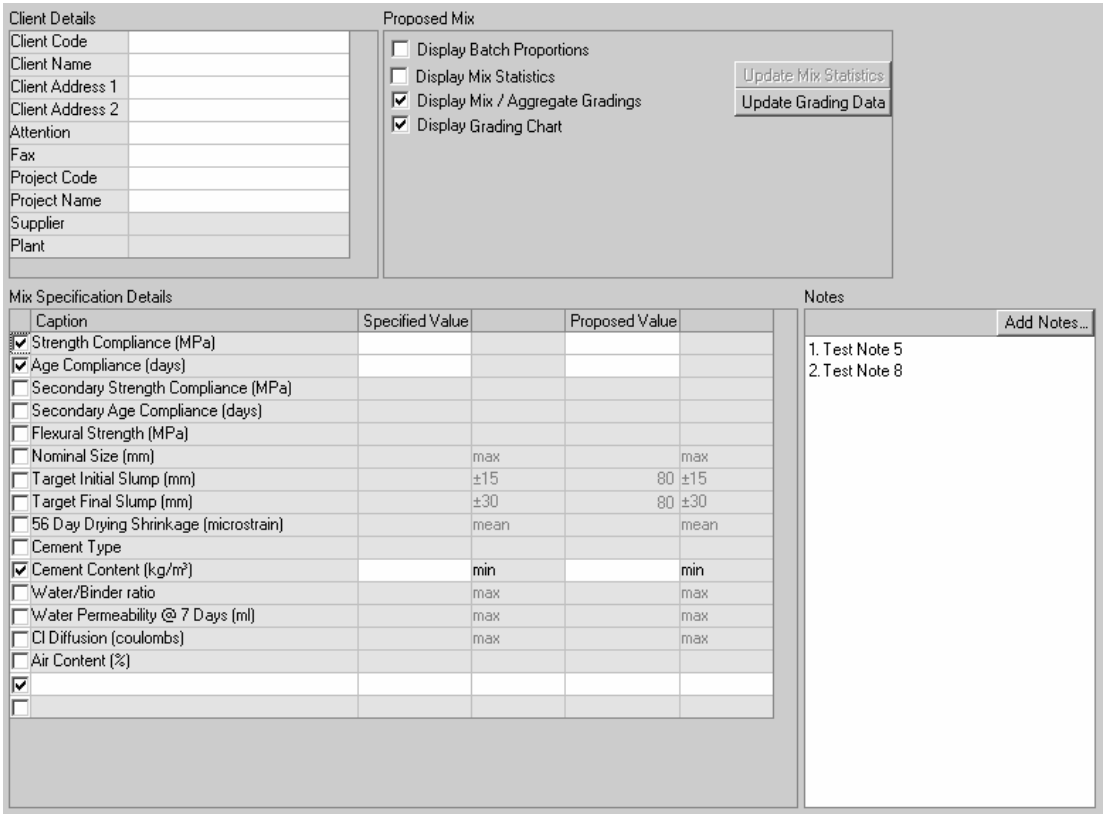
nnnnnnnn = the generated number – formatted to contain 8 digits (leading zeroes)

e.g. 5412-00000032

Note: this means that mix submissions from a particular plant will not necessarily be consecutively numbered.

2.4.3 Data entry tab

The main data entry screen will have a list of pre-defined fields, and some customisable fields, as shown in the mock-up below.



Client Details

Currently, Client and project details are not available in QESTMix. These can either be entered manually (on each Mix Submission), or alternatively, the details may be able to be pulled in from QESTLab.

When the Client code is entered, then the client details will be looked up from the global client list (INTERFACE_ListClient) in the QESTLab database. Although these details may not be correct, they provide a good starting point for the person generating the mix submission. The Client Code field can be skipped if it is not known.

Similarly, entering the project code will look up the project name. This could also be skipped, and the Project Name entered in full.

Mix Specification Details

Most of the available fields will be listed in a grid, which will contain 5 columns. There will be several pre-defined fields that will be available to all Mix Submissions, and also the ability to add additional user-defined detail lines. As many of these can be added as necessary – whenever the checkbox in the last (empty) row is added, a new row will be added to the bottom of the list.

The columns are as follows:

Show: Checkbox indicating whether or not the line should be displayed on the report. Deselecting a field will lock out the other columns, however existing data will be retained.

Description: Descriptive text for the detail – in most cases this is pre-defined, however the user will be able to add additional detail rows in which this description will be editable.

Specified Value: This will always be entered by the user, based on the client's specifications.

Specified Tolerance: In most cases this will be pre-defined – e.g. "max" for Agg Size, "±15" for Design Slump, etc.

Proposed Value: This column will largely be auto-populated from the mix design / product mix. It will need to be manually entered for user defined fields, and for fields that are not available from the mix.

Comment [LM1]: *QESTMix Implementation Note*

Does it make sense to have all these default fields defined in a database table somewhere? This would make it very easy to adjust. We could specify some or all values in the DB, and make it so that Nulls are editable (use empty string if it should be locked)... or have properties indicating whether or not they should be editable.

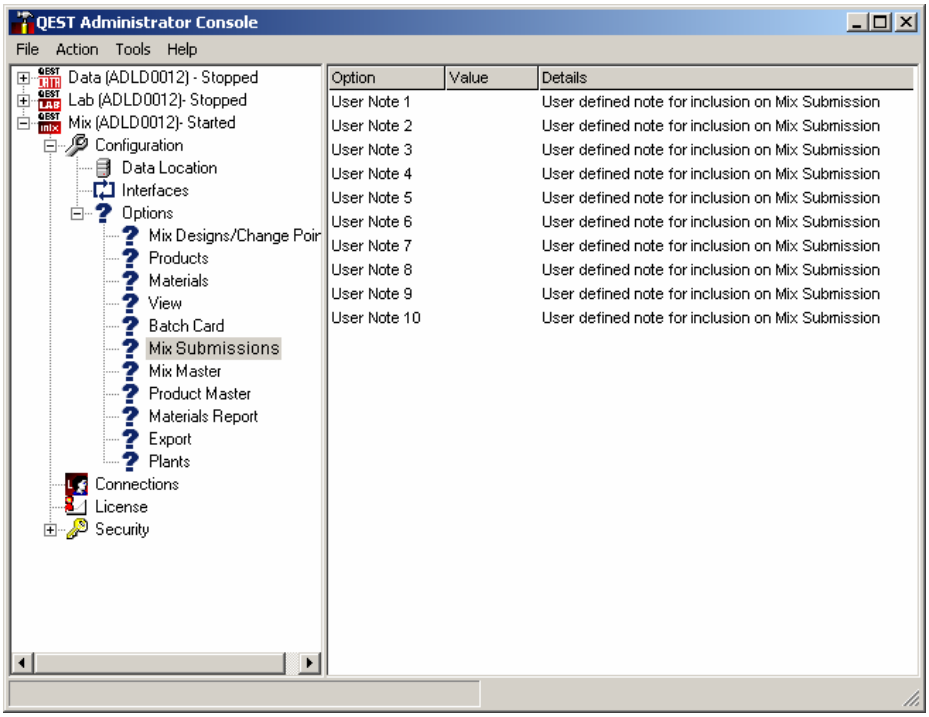
Note: Need to be able to specify where the Proposed Value should come from (if it can be looked up automatically)

Typical Mix Statistics

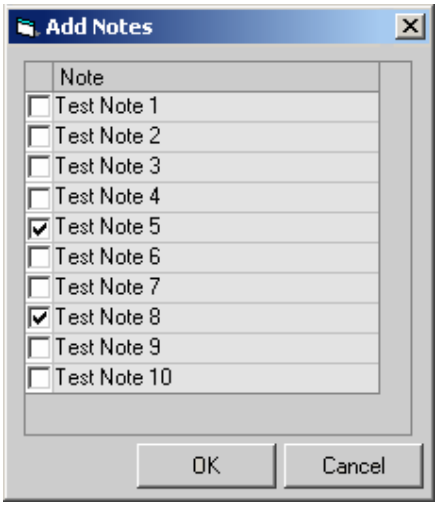
These are only able to be calculated for submissions based on an existing product. These statistics will be calculated via a QESTLab lookup, in the same way as performance data is looked up in the products screen. This will be done via a dialog with an entry field for the number of results, and ok/cancel buttons. Note that the statistic lookup will be disabled for mix submissions that are linked to a mix design rather than an existing product (the lookup requires that there is a product that has actually been produced and tested).

Notes

These are able to be defined in the QAC. Up to 10 notes that can be pre-defined.



These notes can be added to the mix submission via the "Add Notes" dialog. All notes selected for addition will be appended to the notes text.



Other Display Options

Batch Proportions – indicate whether to display the batch proportions section on the mix submission report

Mix / Aggregate Gradings – indicate whether to show the mix gradings on the report. The individual material gradings will come from the target gradings from the materials. The combined grading for the mix will also be displayed (based on the material target gradings).

Show Chart – indicate whether to show the grading chart. Note that this is only available when the Mix / Aggregate Gradings are shown.

2.4.4 Report tab

The report will be loosely based on the test reports area in QESTLab. We will be able to make use of the new 'custom test reports' functionality for the entire report, however there will be a couple of small enhancements we will need to make. (Note: this is implementation information, probably shouldn't be listed here.

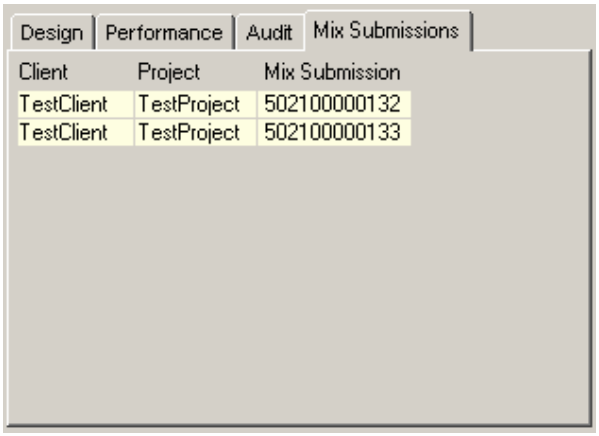
The report needs to be able to be signed, which will result in the original mix submission screen to be locked out completely. Note that the user will not be able to "un-sign" the mix submission once it has been signed and then saved – a new one will need to be generated.

New items will be added to the toolbar for "print" and "export to pdf". These will be enabled while the mix submission report is displayed.

2.5 Mix Submissions Tab on Mix Screen

A new tab will be added to the mix screen (both product mixes and design mixes). This will contain a list of mix submissions, along with some brief details (client / project / date / anything else?). The items in the list will be links (via double-click / right-click menu) to the actual mix submissions, providing easy access to the actual submissions without needing to hunt through the QESTMix tree for them (or run a data filter that returns them).

Comment [LM2]: *What about change point groups? When associating a mix submission with a design that is related to a change point group, it won't really make sense to have it listed from the mix screen. (this may be an issue for boral)*



3. Assumptions and Additional Constraints

n/a