pat usr flds Analysis~~20170717 pat_usr_flds Analysis.docx~~

Code – for information only.

This is the SQL program used to analyse the table. It is included as it may be of use to relevant application managers in understanding the analysis in detail.

The results are placed in tables which are exported to Excel spreadsheets of the same name as the SQL table.

```
/**
        Script name aPtntUsrFlds.sql
        Script for analysing table [RISMigration].[dbo].[pat_usr_flds] placing the results in a series
of tables for further consideration
        Drops tables first if present
        [redacted]
        Modified to use RISSource tables for source data[redacted]
**/

SET DATEFORMAT ymd; -- necessary to correctly interpret fields 3 & 4

PRINT '' PRINT '' PRINT '                                        Field 1 & 2 Primary Key test'

/**
        Fields 1 & 2 combine to form the primary key. This part of the script checks the primary key
for duplication.
        Ideally the output table should be empty. If not then the provided values are an issue.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 43 records. Output
to PtntUsrFlds_0010_DupPK. '
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0010_DupPK', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0010_DupPK];

SELECT *
        INTO [RISMigration].[dbo].[PtntUsrFlds_0010_DupPK]
        FROM
                (SELECT DISTINCT [pat_itn], [type], COUNT([pat_itn]) AS RecCount
                        FROM [RISSource].[dbo].[pat_usr_flds]
                        GROUP BY [pat_itn], [type]) AS A
        WHERE RecCount > 1


PRINT '' PRINT '' PRINT '                                        Field 1 tests'

PRINT '' PRINT '' PRINT '                                        Field 1 referential integrity tests
against table pat_name'

/**
        Field 1 is a foreign key field of the parent table pat_name.
        This part of the script checks field 1 for orphan records.
        Ideally the output table should be empty. If not then the provided values are an issue
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 19 records. Output
to PtntUsrFlds_0010_Orph.'
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0010_Orph', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0010_Orph];

SELECT A.[pat_itn]
        , A.[RecCount]
        INTO [RISMigration].[dbo].[PtntUsrFlds_0010_Orph]
        FROM (
                SELECT DISTINCT [pat_itn], COUNT([pat_itn]) AS RecCount
                FROM [RISSource].[dbo].[pat_allergy]
                GROUP BY [pat_itn]
                ) AS A
        LEFT JOIN [RISSource].[dbo].[pat_name] AS B
        ON A.pat_itn = B.pat_itn
        WHERE B.pat_itn IS NULL
```

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```
PRINT '' PRINT '' PRINT '                                        Field 2 tests'

PRINT '' PRINT '' PRINT '                                        Field 2 content test'

/**
        Field 2 [type] purpose is currently not known.
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
PtntUsrFlds_0020_List. '
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0020_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0020_List];

SELECT [type]
        , COUNT([type]) AS RecCount
        INTO [RISMigration].[dbo].[PtntUsrFlds_0020_List]
        FROM [RISSource].[dbo].[pat_usr_flds]
        GROUP BY [type]
        ORDER BY [type]


PRINT '' PRINT '' PRINT '                                        Field 3 tests'

PRINT '' PRINT '' PRINT '                                        Field 3 content test'

/**
        Field 3 [date_1] purpose is currently not known.
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
PtntUsrFlds_0030_List. '
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0030_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0030_List];

SELECT [date_1_conv]
        , COUNT([date_1_conv]) AS RecCount
        INTO [RISMigration].[dbo].[PtntUsrFlds_0030_List]
        FROM
        (
        SELECT CONVERT(datetime, [date_1], 103 ) AS [date_1_conv]
                , [date_1]
        FROM [RISSource].[dbo].[pat_usr_flds]
        ) AS A
        GROUP BY [date_1_conv]
        ORDER BY [date_1_conv]


PRINT '' PRINT '' PRINT '                                        Field 4 tests'

PRINT '' PRINT '' PRINT '                                        Field 4 content test'

/**
        Field 4 [date_2] purpose is currently not known.
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
PtntUsrFlds_0040_List. '
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0040_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0040_List];

SELECT [date_2_conv]
        , COUNT([date_2_conv]) AS RecCount
        INTO [RISMigration].[dbo].[PtntUsrFlds_0040_List]
        FROM
        (
        SELECT CONVERT(datetime, [date_2], 103 ) AS [date_2_conv]
```

```
                , [date_2]
        FROM [RISSource].[dbo].[pat_usr_flds]
        ) AS A
        GROUP BY [date_2_conv]
        ORDER BY [date_2_conv]


PRINT '' PRINT '' PRINT '                                       Field 5 tests'

PRINT '' PRINT '' PRINT '                                       Field 5 content test'

/**
        Field 5 [usr_fld_1] purpose is currently not known.
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
PtntUsrFlds_0050_List. '
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0050_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0050_List];

SELECT [usr_fld_1]
        , COUNT([usr_fld_1]) AS RecCount
        INTO [RISMigration].[dbo].[PtntUsrFlds_0050_List]
        FROM [RISSource].[dbo].[pat_usr_flds]
        GROUP BY [usr_fld_1]


PRINT '' PRINT '' PRINT '                                       Field 6 tests'

PRINT '' PRINT '' PRINT '                                       Field 6 content test'

/**
        Field 6 [usr_fld_2] purpose is currently not known.
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
PtntUsrFlds_0060_List. '
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0060_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0060_List];

SELECT [usr_fld_2]
        , COUNT([usr_fld_2]) AS RecCount
        INTO [RISMigration].[dbo].[PtntUsrFlds_0060_List]
        FROM [RISSource].[dbo].[pat_usr_flds]
        GROUP BY [usr_fld_2]


PRINT '' PRINT '' PRINT '                                       Field 7 tests'

PRINT '' PRINT '' PRINT '                                       Field 7 content test'

/**
        Field 7 [usr_fld_3] purpose is currently not known.
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
PtntUsrFlds_0070_List. '
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0070_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0070_List];

SELECT [usr_fld_3]
        , COUNT([usr_fld_3]) AS RecCount
        INTO [RISMigration].[dbo].[PtntUsrFlds_0070_List]
        FROM [RISSource].[dbo].[pat_usr_flds]
        GROUP BY [usr_fld_3]


PRINT '' PRINT '' PRINT '                                       Field 8 tests'
```

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```
PRINT '' PRINT '' PRINT '                                        Field 8 content test'

/**
        Field 8 [usr_fld_4] purpose is currently not known.
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
PtntUsrFlds_0080_List. '
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0080_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0080_List];

SELECT [usr_fld_4]
        , COUNT([usr_fld_4]) AS RecCount
        INTO [RISMigration].[dbo].[PtntUsrFlds_0080_List]
        FROM [RISSource].[dbo].[pat_usr_flds]
        GROUP BY [usr_fld_4]


PRINT '' PRINT '' PRINT '                                        Field 9 tests'

PRINT '' PRINT '' PRINT '                                        Field 9 content test'

/**
        Field 9 [usr_fld_5] purpose is currently not known.
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
PtntUsrFlds_0090_List. '
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0090_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0090_List];

SELECT [usr_fld_5]
        , COUNT([usr_fld_5]) AS RecCount
        INTO [RISMigration].[dbo].[PtntUsrFlds_0090_List]
        FROM [RISSource].[dbo].[pat_usr_flds]
        GROUP BY [usr_fld_5]


PRINT '' PRINT '' PRINT '                                        Field 10 tests'

PRINT '' PRINT '' PRINT '                                        Field 10 content test'

/**
        Field 10 [usr_fld_6] purpose is currently not known.
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
PtntUsrFlds_0100_List. '
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0100_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0100_List];

SELECT [usr_fld_6]
        , COUNT([usr_fld_6]) AS RecCount
        INTO [RISMigration].[dbo].[PtntUsrFlds_0100_List]
        FROM [RISSource].[dbo].[pat_usr_flds]
        GROUP BY [usr_fld_6]


PRINT '' PRINT '' PRINT '                                        Field 11 tests'

PRINT '' PRINT '' PRINT '                                        Field 11 content test'

/**
        Field 11 [usr_fld_7] purpose is currently not known.
        This test lists permutations and counts.
**/
```

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```
PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
PtntUsrFlds_0110_List. '
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0110_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0110_List];

SELECT [usr_fld_7]
        , COUNT([usr_fld_7]) AS RecCount
        INTO [RISMigration].[dbo].[PtntUsrFlds_0110_List]
        FROM [RISSource].[dbo].[pat_usr_flds]
        GROUP BY [usr_fld_7]


PRINT '' PRINT '' PRINT '                                       Field 12 tests'

PRINT '' PRINT '' PRINT '                                       Field 12 content test'

/**
        Field 12 [usr_fld_8] purpose is currently not known.
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
PtntUsrFlds_0120_List. '
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0120_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0120_List];

SELECT [usr_fld_8]
        , COUNT([usr_fld_8]) AS RecCount
        INTO [RISMigration].[dbo].[PtntUsrFlds_0120_List]
        FROM [RISSource].[dbo].[pat_usr_flds]
        GROUP BY [usr_fld_8]


PRINT '' PRINT '' PRINT '                                       Field 13 tests'

PRINT '' PRINT '' PRINT '                                       Field 13 content test'

/**
        Field 13 [usr_fld_9] purpose is currently not known.
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
PtntUsrFlds_0130_List. '
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0130_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0130_List];

SELECT [usr_fld_9]
        , COUNT([usr_fld_9]) AS RecCount
        INTO [RISMigration].[dbo].[PtntUsrFlds_0130_List]
        FROM [RISSource].[dbo].[pat_usr_flds]
        GROUP BY [usr_fld_9]


PRINT '' PRINT '' PRINT '                                       Field 14 tests'

PRINT '' PRINT '' PRINT '                                       Field 14 content test'

/**
        Field 14 [usr_fld_10] purpose is currently not known.
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
PtntUsrFlds_0140_List. '
IF OBJECT_ID('RISMigration.dbo.PtntUsrFlds_0140_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntUsrFlds_0140_List];

SELECT [usr_fld_10]
        , COUNT([usr_fld_10]) AS RecCount
        INTO [RISMigration].[dbo].[PtntUsrFlds_0140_List]
```

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```
FROM [RISSource].[dbo].[pat_usr_flds]
GROUP BY [usr_fld_10]
```

Messages on execution– for information only.

This is the message output of SQL during execution of this code. It is included as it may be of use to relevant application managers in understanding the analysis in detail.

```
                                Field 1 & 2 Primary Key test

This test should produce zero records however there are currently 43 records. Output to
PtntUsrFlds_0010_DupPK.

(43 row(s) affected)

                                Field 1 tests

                                Field 1 referential integrity tests against table pat_name

This test should produce zero records however there are currently 19 records. Output to
PtntUsrFlds_0010_Orph.

(19 row(s) affected)

                                Field 2 tests

                                Field 2 content test

List of values and counts. Blank values have not been excluded. Output to PtntUsrFlds_0020_List.

(84 row(s) affected)

                                Field 3 tests

                                Field 3 content test

List of values and counts. Blank values have not been excluded. Output to PtntUsrFlds_0030_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(25575 row(s) affected)

                                Field 4 tests

                                Field 4 content test

List of values and counts. Blank values have not been excluded. Output to PtntUsrFlds_0040_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(2015 row(s) affected)

                                Field 5 tests

                                Field 5 content test

List of values and counts. Blank values have not been excluded. Output to PtntUsrFlds_0050_List.
Warning: Null value is eliminated by an aggregate or other SET operation.
```

(823 row(s) affected)

Field 6 tests

Field 6 content test

List of values and counts. Blank values have not been excluded. Output to PtntUsrFlds_0060_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(256 row(s) affected)

Field 7 tests

Field 7 content test

List of values and counts. Blank values have not been excluded. Output to PtntUsrFlds_0070_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(230 row(s) affected)

Field 8 tests

Field 8 content test

List of values and counts. Blank values have not been excluded. Output to PtntUsrFlds_0080_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(24020 row(s) affected)

Field 9 tests

Field 9 content test

List of values and counts. Blank values have not been excluded. Output to PtntUsrFlds_0090_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(129 row(s) affected)

Field 10 tests

Field 10 content test

List of values and counts. Blank values have not been excluded. Output to PtntUsrFlds_0100_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(16 row(s) affected)

Field 11 tests

Field 11 content test

List of values and counts. Blank values have not been excluded. Output to PtntUsrFlds_0110_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(1 row(s) affected)

Field 12 tests

pat_usr_flds Analysis20170717 pat_usr_flds Analysis.docx

Field 12 content test

List of values and counts. Blank values have not been excluded. Output to PtntUsrFlds_0120_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(22714 row(s) affected)

Field 13 tests

Field 13 content test

List of values and counts. Blank values have not been excluded. Output to PtntUsrFlds_0130_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(1 row(s) affected)

Field 14 tests

Field 14 content test

List of values and counts. Blank values have not been excluded. Output to PtntUsrFlds_0140_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(1 row(s) affected)

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Purpose

This document summarises the findings of analysing data from the current RIS patient table as a prelude to possible cleansing of the data and migration to the new RISPACS application. The analysis is based on summarising the data in ways that appear appropriate.

The analysis comprises summarising each field and raising any apparent issues for consideration by the business and possible corrections.

Other forms of analysis are possible and any feedback from the business as to the inclusion of other forms of analysis is welcome.

The original of this document and the spreadsheets are stored at \\act.gov.au\act health\TCH\medicalservices\Medical Imaging\052_Systems\RISPACS\IDIS- Data Migration\Data Analyst\RIS Table Analysis\patient\20170627 patient.

Overview

Some of the fields in this table appear to have dependences:

- On other fields within the table; and
- On other tables within the application.

This table is populated from the ACTPAS application. There are no other sources currently known.

Detail & Action Items

These action items derive from the analysis of the fields listed. The identified values appear to the data analyst to be of concern, however the decision as to the validity of the values and any decisions regarding corrective action is the responsibility of the business.

Options for corrective action include editing, extracting for storage elsewhere, or deleting the relevant records.

Fields 1 & 2 primary key

Fields 1 (pat_itn) and 2 (hosp) combine to form the primary key.

Spreadsheet Ptnt_0010_DupPK.xlsx lists duplicate values in this field. The table is empty therefore the field appears to be acceptable.

Field 1: [pat_itn]

This field is a child field to table "pat_name".

Spreadsheet Ptnt_0010_Orph.xlsx lists records in this table that do not appear in the parent table and hence orphan records. There are 115 distinct values of the field "pat_itn" – some of which reoccur. This list has been sent to ACTPAS support and we understand that all these patients are valid in the PAS. Therefore a load from the PAS should allow us to fix these links. However, this may

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not be required since further analysis and feedback from Siemens indicates that these records are not linked to any activities.

Action Item 1. The RISPACS team will provide a resolution for orphan records (failure in referential integrity) identified in spreadsheet Ptnt_0010_Orph.xlsx.

Action Item 2. It is understood that there is a one-to-one relationship between "pat-itn" and "pt_rad_no" such that a given "pat-itn" would have only one "pt_rad_no". Ptnt_0011_DupRad.xlsx lists 27578 values of "pat-itn" that each have multiple values of "pt_rad_no".

The RISPACS team will provide a resolution for the failures of the one-to-one relationship between values of "pat-itn" and "pt_rad_no" identified in Ptnt_0011_DupRad.xlsx or advise where the analysis has failed to correctly check the data. The difference often appears to be when the patient table has a Calvary and a TCH record, and a different mrn as well. I would expect that the bulk of the multiple rad's and mrn's will match. We will need to validate these lists against ACTPAS. Further analysis indicates that the rad_no is not required.

Action Item 3. It is understood that there is a one-to-one relationship between "pat-itn" and "pt_med_rec_no" such that a given "pat-itn" would have only one "pt_med_rec_no". Ptnt_0012_DupMed.xlsx lists 27000 values of "pat-itn" that each have multiple values of "pt_med_rec_no".

The RISPACS team will provide a resolution for the failures of the one-to-one relationship between values of "pat-itn" and "pt_med_rec_no" identified in Ptnt_0012_DupMed.xlsx or advise where the analysis has failed to correctly check the data. See item 2 above. Matching the two lists does indicate that there is a significant correlation, with slightly more multiple rad's than mrn's.

Action Item 4. It is understood that there is a one-to-one relationship between "pat-itn" and "pt_ss_no" such that a given "pat-itn" would have only one "pt_ss_no". Ptnt_0013_DupSS.xlsx lists 1269 values of "pat-itn" that each have multiple values of "pt_ss_no".

The RISPACS team will provide a resolution for the failures of the one-to-one relationship between values of "pat-itn" and "pt_ss_no" identified in Ptnt_0013_DupSS.xlsx or advise where the analysis has failed to correctly check the data. There does not appear to be any relationship between these records and the previous ones. Need information from Siemens on what the ss_no is used for. Analysis indicates that migration is not required.

Action Item 5. It is understood that there is a one-to-one relationship between "pat-itn" and "prev_med_rec_no_1" such that a given "pat-itn" would have only one "prev_med_rec_no_1". Ptnt_0014_DupMed.xlsx lists 169276 values of "pat-itn" that each have multiple values of "prev_med_rec_no_1".

The RISPACS team will provide a resolution for the failures of the one-to-one relationship between values of "pat-itn" and "prev_med_rec_no_1" identified in Ptnt_0014_DupMed.xlsx or advise where the analysis has failed to correctly check the data. We do not have enough information here. Probably generated by the merge process, but we need to have the specifications from Siemens as to how that

works within the database. There is no mechanism for migrating these values to the Agfa system.

Action Item 6. It is understood that there is a one-to-one relationship between "pat-itn" and "prev_med_rec_no_2" such that a given "pat-itn" would have only one "prev_med_rec_no_2". Ptnt_0015_DupMed.xlsx lists 13035 values of "pat-itn" that each have multiple values of "prev_med_rec_no_2".

The RISPACS team will provide a resolution for the failures of the one-to-one relationship between values of "pat-itn" and "prev_med_rec_no_2" identified in Ptnt_0015_DupMed.xlsx or advise where the analysis has failed to correctly check the data. As above. Because the number of additional records is decreasing it might indicate that these are additional merged records.

Action Item 7. It is understood that there is a one-to-one relationship between "pat-itn" and "prev_med_rec_no_3" such that a given "pat-itn" would have only one "prev_med_rec_no_3". Ptnt_0016_DupMed.xlsx lists 239 values of "pat-itn" that each have multiple values of "prev_med_rec_no_3".

The RISPACS team will provide a resolution for the failures of the one-to-one relationship between values of "pat-itn" and "prev_med_rec_no_3" identified in Ptnt_0016_DupMed.xlsx or advise where the analysis has failed to correctly check the data. As above.

Field 2: [hosp]

This field is a child field to table "hosp".

Spreadsheet Ptnt_0020_Orph.xlsx lists records in this table that do not appear in the parent table and hence orphan records. There are 13 distinct values of the field "~~pat_itn~~hosp" – many of which reoccur in large numbers. The valid values for Hospital codes must be determined and all these records will need cleansing during extract. The mapping rules will need input from RISPACS and Siemens (and possibly ACTPAS).

Action Item 8. The RISPACS team will provide a resolution for orphan records (failure in referential integrity) identified in spreadsheet Ptnt_0020_Orph.xlsx.

Field 3: [pt_rad_no]

It is understood that field "pt_rad_no" comprises a 12-character string (Null/blank permitted) representing a positive integer padded with leading zeroes. Ptnt_0030_BadStr.xlsx lists 9531 records (providing the primary key pat_itn/hosp) where this is not the case. Apart from a very few records, these have been generated with ascending itn's and the rad_no's conform to one of three formats: T-nnnnnn, CAnnnnnn, and Xnnnnnn, each with leading zeroes and generally ascending numeric sequences. These may well be old records generated as part of initial data migration into Siemens (e.g. Détente). This will need to be confirmed.

It is also understood that there is a one-to-one relationship between "pat-itn" and "pt_rad_no" such that a given "pt_rad_no" would have only one "pat-itn". Ptnt_0031_DupPat.xlsx lists 16587 values of "pt_rad_no" that each have multiple values of "pat-itn". This indicates that we actually may have a many-to-many relationship, since there are multiple rad's to itn's as well. The purpose of the rad_no needs to be clarified so we can understand the issues.

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Action Item 9. The RISPACS team will provide a resolution for the "pt_rad_no" records listed in Ptnt_0030_BadStr.xlsx that do not satisfy the understood norms for that field or advise where the analysis has failed to correctly check the data.

Action Item 10. The RISPACS team will provide a resolution for the failures of the one-to-one relationship between values of "pat-itn" and "pt_rad_no" identified in Ptnt_0031_DupPat.xlsx or advise where the analysis has failed to correctly check the data.

Field 4: [pt_med_rec_no]

It is understood that field "pt_med_rec_no" comprises a 12-character string (Null/blank not permitted) representing a positive integer padded with leading zeroes. Ptnt_0040_BadStr.xlsx lists 9748 records (providing the primary key pat_itn/hosp) where this is not the case. In general, the mrn's in this column match the equivalent rad_no's. This also leads to the possibility that these are from the original data migration.

It is also understood that there is a one-to-one relationship between "pat-itn" and "pt_med_rec_no" such that a given "pt_med_rec_no" would have only one "pat-itn". Ptnt_0041_DupPat.xlsx lists 16562 values of "pt_med_rec_no" that each have multiple values of "pat-itn". With few exceptions there is a correlation between rad_no's and mrn's where the multiple itn's occur. We have no information yet as to why this can occur. Siemens to advise.

Action Item 11. The RISPACS team will provide a resolution for the "pt_med_rec_no" records listed in Ptnt_0040_BadStr.xlsx that do not satisfy the understood norms for that field or advise where the analysis has failed to correctly check the data.

Action Item 12. The RISPACS team will provide a resolution for the failures of the one-to-one relationship between values of "pat-itn" and "pt_med_rec_no" identified in Ptnt_0041_DupPat.xlsx or advise where the analysis has failed to correctly check the data.

Field 5: [pt_ss_no]

It is understood that the field "pt_ss_no" is used for Medicare or DVA numbers. The range of values in this field do not appear to all conform to those numbering systems. The range of values and record counts for each have been listed in Ptnt_0050_List.xlsx for inspection and further analysis. There is no obvious standard that these conform to, but many records are variations on one or another format. However, Siemens will need to identify the field's purpose.

It is also understood that there is a one-to-one relationship between "pat-itn" and "pt_ss_no" such that a given "pt_ss_no" would have only one "pat-itn". Ptnt_0051_DupPat.xlsx lists 885 values of "pt_ss_no" that each have multiple values of "pat-itn". See previous comment.

Action Item 13. The RISPACS team will advise the purpose and content of the field and an algorithm for determining the validity or otherwise of the "pt_ss_no" records listed in Ptnt_0050_BadStr.xlsx.

Action Item 14. The RISPACS team will provide a resolution for the failures of the one-to-one relationship between values of "pat-itn" and "pt_ss_no" identified in

Ptnt_0051_DupPat.xlsx or advise where the analysis has failed to correctly check the data.

Field 6: [user_defined_key]

The purpose of the field "user_defined_key" is not understood. The range of values and record counts for each have been listed in Ptnt_0060_List.xlsx for inspection and further analysis. There is no obvious purpose to these values. Siemens will need to provide information here.

Action Item 15. The RISPACS team will advise the purpose and content of the field and an algorithm for determining the validity of the "user_defined_key" records listed in Ptnt_0060_List.xlsx.

Field 7: [prev_med_rec_no_1]

It is understood that field "prev_med_rec_no_1" comprises a 12-character string (Null/blank permitted) representing a positive integer padded with leading zeroes. Ptnt_0070_BadStr.xlsx lists 101 records (providing the primary key pat_itn/hosp) where this is not the case. These would appear in general to be where a temporary RIS patient has been merged with the PAS record when loaded from ACTPAS. This will need to be confirmed. If so, there should be no data migration issues for the bulk of these records.

It is also understood that there is a one-to-one relationship between "pat-itn" and "prev_med_rec_no_1" such that a given "prev_med_rec_no_1" would have only one "pat-itn". Ptnt_0071_DupPat.xlsx lists 356 values of "prev_med_rec_no_1" that each have multiple values of "pat-itn". Our understanding is that all 'previous' mrn's should be the result of a patient merge. It does therefore seem logical that a previous mrn should not 'belong' to more than one itn. It may be that the mrn gets merged twice so shows up against the two itn's. Siemens will need to provide information on the merge process.

Action Item 16. The RISPACS team will provide a resolution for the "prev_med_rec_no_1" records listed in Ptnt_0070_BadStr.xlsx that do not satisfy the understood norms for that field or advise where the analysis has failed to correctly check the data.

Action Item 17. The RISPACS team will provide a resolution for the failures of the one-to-one relationship between values of "pat-itn" and "prev_med_rec_no_1" identified in Ptnt_0071_DupPat.xlsx or advise where the analysis has failed to correctly check the data.

Field 8: [prev_med_rec_no_2]

It is understood that field "prev_med_rec_no_2" comprises a 12-character string (Null/blank permitted) representing a positive integer padded with leading zeroes. Ptnt_0080_BadStr.xlsx lists 9 records (providing the primary key pat_itn/hosp) where this is not the case. As for Field 7 above.

It is also understood that there is a one-to-one relationship between "pat-itn" and "prev_med_rec_no_2" such that a given "prev_med_rec_no_2" would have only one "pat-itn". Ptnt_0081_DupPat.xlsx lists 3 values of "prev_med_rec_no_2" that each have multiple values of "pat-itn". As for Field 7 above.

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Action Item 18. The RISPACS team will provide a resolution for the "prev_med_rec_no_2" records listed in Ptnt_0080_BadStr.xlsx that do not satisfy the understood norms for that field or advise where the analysis has failed to correctly check the data.

Action Item 19. The RISPACS team will provide a resolution for the failures of the one-to-one relationship between values of "pat-itn" and "prev_med_rec_no_2" identified in Ptnt_0081_DupPat.xlsx or advise where the analysis has failed to correctly check the data.

Field 9: [prev_med_rec_no_3]

It is understood that field "prev_med_rec_no_3" comprises a 12-character string (Null/blank permitted) representing a positive integer padded with leading zeroes. Ptnt_0090_BadStr.xlsx lists 3 records (providing the primary key pat_itn/hosp) where this is not the case. As for Field 7 above.

It is also understood that there is a one-to-one relationship between "pat-itn" and "prev_med_rec_no_3" such that a given "prev_med_rec_no_3" would have only one "pat-itn". Ptnt_0091_DupPat.xlsx lists 0 values of "prev_med_rec_no_3" that each have multiple values of "pat-itn". As for Field 7 above.

Action Item 20. The RISPACS team will provide a resolution for the "prev_med_rec_no_3" records listed in Ptnt_0090_BadStr.xlsx that do not satisfy the understood norms for that field or advise where the analysis has failed to correctly check the data.

Action Item 21. The RISPACS team will provide a resolution for the failures of the one-to-one relationship between values of "pat-itn" and "prev_med_rec_no_3" identified in Ptnt_0091_DupPat.xlsx or advise where the analysis has failed to correctly check the data.

Field 10: [pt_intfc_sts]

Ptnt_0100_List.xlsx summarises field "pt_intfc_sts" and shows that it contains no values other than blanks. As such it appears that the field is not used.

Action Item 22. The RISPACS team will advise whether the field "pt_intfc_sts" is used and if so then why Ptnt_0100_List.xlsx shows no data.

Field 11: [mrn_assign_auth_cd]

Ptnt_0110_List.xlsx summarises field "mrn_assign_auth_cd" and shows that it contains no values other than blanks. As such it appears that the field is not used.

Action Item 23. The RISPACS team will advise whether the field "mrn_assign_auth_cd" is used and if so then why Ptnt_0110_List.xlsx shows no data.

Field 12: [pt_med_rec_no_ext]

It is understood that field "pt_med_rec_no_ext" comprises a string of digits (Null/blank not permitted). Ptnt_0120_BadStr.xlsx lists 3 records (providing the primary key pat_itn/hosp) where there are non-numeric characters in the field. May not be an issue if this field does not require migration. Otherwise it may be able to be re-generated according to specific rules. Siemens to provide the purpose of this field.

It is also understood that "pt_med_rec_no_ext" comprises the contents of field "pt_med_rec_no" without leading zeroes. Ptnt_0121_List.xlsx lists 482973 records (providing the primary key pat_itn/hosp) where this is not the case. Siemens to advise.

Action Item 24. The RISPACS team will provide a resolution for the "pt_med_rec_no_ext" records listed in Ptnt_0120_BadStr.xlsx that do not satisfy the understood norms for that field or advise where the analysis has failed to correctly check the data.

Action Item 25. The RISPACS team will provide a resolution for the "pt_med_rec_no_ext" records listed in Ptnt_0121_List.xlsx that do not satisfy the understood norms for that field (a copy of the field "pt_med_rec_no" without the leading zeroes) or advise where the analysis has failed to correctly check the data.

Field 13: [pt_med_rec_no_chk_digit]

Ptnt_0130_List.xlsx summarises field "pt_med_rec_no_chk_digit" and shows that it contains no values other than blanks. As such it appears that the field is not used.

Action Item 26. The RISPACS team will advise whether the field "pt_med_rec_no_chk_digit" is used and if so then why Ptnt_0130_List.xlsx shows no data.

Field 14: [user_key_assign_auth_cd]

Ptnt_0140_List.xlsx summarises field "user_key_assign_auth_cd" and shows that it contains no values other than "AUSHIC" and blanks. As such it is of concern that the field is not used.

Action Item 27. The RISPACS team will advise whether the field "user_key_assign_auth_cd" is used and if so then why Ptnt_0140_List.xlsx shows only one value ("AUSHIC") or blanks.

All Medical Number fields

It is understood that field "prev_med_rec_no_1", "prev_med_rec_no_2" and "prev_med_rec_no_3" contain other values of "pt_med_rec_no" for the patient and so there should not be any duplication between the 4 fields within a given record. Ptnt_MMM0_List.xlsx lists 1998 records (providing the primary key pat_itn/hosp) where this is not the case. There has been no attempt to check the order of the values. In nearly all cases there is a pattern to the repeating of the mrn within the set of fields:

- Where there is just an entry in prev1, it is almost invariably equal to the mrn.
- Where there are entries in prev1 and prev2, prev1 is usually an apparently legitimate previous mrn, while prev2 is a repeat of the patient mrn.
- Where all 3 prev_mrn fields have an entry, the duplicate is usually in prev2, while both prev1 and prev3 differ and may be valid merged mrn's.

We will need further information on how the system handles merges to know why these cases occur and how to treat them.

Action Item 28. The RISPACS team will provide a resolution for the presence of repeating values of "pt_med_rec_no", "prev_med_rec_no_1", "prev_med_rec_no_2" or "prev_med_rec_no_3" listed in Ptnt_MMM0_List.xlsx or advise where the analysis has failed to correctly check the data.

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Code – for information only.

This is the SQL program used to analyse the table. It is included as it may be of use to relevant application managers in understanding the analysis in detail.

The results are placed in tables which are exported to Excel spreadsheets of the same name as the SQL table.

```
/**
        Script name aPtnt.sql
        Script for analysing table [RISMigration].[dbo].[patient] placing the results in a series of
tables for further consideration
        Drops tables first if present
        [redacted]
        Modified to use RISSource tables for source data [redacted]
**/


PRINT '' PRINT '' PRINT '                                        Field 1 & 2 Primary Key test'

/**
        Fields 1 & 2 combine to form the primary key. This part of the script checks the primary key
for duplication.
        Ideally the output table should be empty. If not then the provided values are an issue.
**/

PRINT '' PRINT 'This test should produce zero records. Output to Ptnt_0010_DupPK. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0010_DupPK', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0010_DupPK];

SELECT * INTO [RISMigration].[dbo].[Ptnt_0010_DupPK]
        FROM
                (SELECT DISTINCT [pat_itn], [hosp], COUNT([pat_itn]) AS RecCount
                        FROM [RISSource].[dbo].[patient]
                        GROUP BY [pat_itn], [hosp]) AS A
        WHERE RecCount > 1


PRINT '' PRINT '' PRINT '                                        Field 1 tests'

PRINT '' PRINT '' PRINT '                                        Field 1 referential integrity tests
against table pat_name'

/**
        Field 1 is one of the fields that constitute the primary key and is a foreign key field of the
parent table pat_name.
        This part of the script checks field 1 for orphan records.
        Ideally the output table should be empty. If not then the provided values are an issue
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 115 records. Output
to Ptnt_0010_Orph.'
IF OBJECT_ID('RISMigration.dbo.Ptnt_0010_Orph', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0010_Orph];

SELECT A.[pat_itn]
        , A.[RecCount]
        INTO [RISMigration].[dbo].[Ptnt_0010_Orph]
        FROM (
                SELECT DISTINCT [pat_itn], COUNT([pat_itn]) AS RecCount
                FROM [RISSource].[dbo].[patient]
                GROUP BY [pat_itn]
                ) AS A
        LEFT JOIN [RISSource].[dbo].[pat_name] AS B
        ON A.pat_itn = B.pat_itn
        WHERE B.pat_itn IS NULL
```

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```
PRINT '' PRINT '' PRINT '                                    Field 1 check for multiple values of field
3'

/**
        Field 1 is the patient ID (pat_itn) and presumably shouldn't relate to more than one value of
field 3 patient radiology number
        (pat_rad_no).
        This test lists records where there is more than one value of pat_rad_no to a patient.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 27482 records.
Output to Ptnt_0011_DupRad. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0011_DupRad', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0011_DupRad];

SELECT * INTO [RISMigration].[dbo].[Ptnt_0011_DupRad]
        FROM (
                SELECT DISTINCT [pat_itn]
                        , COUNT([pat_itn]) AS pt_rad_no_Count
                        FROM (
                                SELECT DISTINCT [pt_rad_no], [pat_itn]
                                        FROM [RISSource].[dbo].[patient]
                                        GROUP BY [pt_rad_no], [pat_itn]
                                ) AS A
                        GROUP BY [pat_itn]
                ) AS B
        WHERE pt_rad_no_Count > 1


PRINT '' PRINT '' PRINT '                                    Field 1 check for multiple values of field
4'

/**
        Field 1 is the patient ID (pat_itn) and presumably shouldn't relate to more than one value of
field 4 patient medical number
        (pt_med_rec_no).
        This test lists records where there is more than one value of pt_med_rec_no to a patient.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 26907 records.
Output to Ptnt_0012_DupMed. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0012_DupMed', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0012_DupMed];

SELECT * INTO [RISMigration].[dbo].[Ptnt_0012_DupMed]
        FROM (
                SELECT DISTINCT [pat_itn]
                        , COUNT([pat_itn]) AS pt_med_rec_no_Count
                        FROM (
                                SELECT DISTINCT [pt_med_rec_no], [pat_itn]
                                        FROM [RISSource].[dbo].[patient]
                                        GROUP BY [pt_med_rec_no], [pat_itn]
                                ) AS A
                        GROUP BY [pat_itn]
                ) AS B
        WHERE pt_med_rec_no_Count > 1


PRINT '' PRINT '' PRINT '                                    Field 1 check for multiple values of field
5'

/**
        Field 1 is the patient ID (pat_itn) and presumably shouldn't relate to more than one value of
field 5 patient social security number
        (pt_ss_no).
        This test lists records where there is more than one value of pt_med_rec_no to a patient.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 1269 records. Output
to Ptnt_0013_DupSS. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0013_DupSS', 'U') IS NOT NULL
```

```
	DROP TABLE [RISMigration].[dbo].[Ptnt_0013_DupSS];

SELECT * INTO [RISMigration].[dbo].[Ptnt_0013_DupSS]
	FROM (
		SELECT DISTINCT [pat_itn]
			, COUNT([pat_itn]) AS pt_ss_no_Count
			FROM (
				SELECT DISTINCT [pt_ss_no], [pat_itn]
					FROM [RISSource].[dbo].[patient]
					GROUP BY [pt_ss_no], [pat_itn]
				) AS A
			GROUP BY [pat_itn]
		) AS B
	WHERE pt_ss_no_Count > 1


PRINT '' PRINT '' PRINT '                                    Field 1 check for multiple values of field
7'

/**
	Field 1 is the patient ID (pat_itn) and presumably shouldn't relate to more than one value of
field 7 patient medical number
	(prev_med_rec_no_1).
	This test lists records where there is more than one value of prev_med_rec_no_1 to a patient.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 169276 records.
Output to Ptnt_0014_DupMed. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0014_DupMed', 'U') IS NOT NULL
	DROP TABLE [RISMigration].[dbo].[Ptnt_0014_DupMed];

SELECT * INTO [RISMigration].[dbo].[Ptnt_0014_DupMed]
	FROM (
		SELECT DISTINCT [pat_itn]
			, COUNT([pat_itn]) AS prev_med_rec_no_1_Count
			FROM (
				SELECT DISTINCT [prev_med_rec_no_1], [pat_itn]
					FROM [RISSource].[dbo].[patient]
					GROUP BY [prev_med_rec_no_1], [pat_itn]
				) AS A
			GROUP BY [pat_itn]
		) AS B
	WHERE prev_med_rec_no_1_Count > 1


PRINT '' PRINT '' PRINT '                                    Field 1 check for multiple values of field
8'

/**
	Field 1 is the patient ID (pat_itn) and presumably shouldn't relate to more than one value of
field 8 patient medical number
	(prev_med_rec_no_2).
	This test lists records where there is more than one value of prev_med_rec_no_2 to a patient.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 3035 records. Output
to Ptnt_0015_DupMed. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0015_DupMed', 'U') IS NOT NULL
	DROP TABLE [RISMigration].[dbo].[Ptnt_0015_DupMed];

SELECT * INTO [RISMigration].[dbo].[Ptnt_0015_DupMed]
	FROM (
		SELECT DISTINCT [pat_itn]
			, COUNT([pat_itn]) AS prev_med_rec_no_2_Count
			FROM (
				SELECT DISTINCT [prev_med_rec_no_2], [pat_itn]
					FROM [RISSource].[dbo].[patient]
					GROUP BY [prev_med_rec_no_2], [pat_itn]
				) AS A
			GROUP BY [pat_itn]
		) AS B
```

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```
	WHERE prev_med_rec_no_2_Count > 1


PRINT '' PRINT '' PRINT '                                        Field 1 check for multiple values of field
9'

/**
	Field 1 is the patient ID (pat_itn) and presumably shouldn't relate to more than one value of
field 9 patient medical number
	(prev_med_rec_no_3).
	This test lists records where there is more than one value of prev_med_rec_no_3 to a patient.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 239 records. Output
to Ptnt_0016_DupMed. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0016_DupMed', 'U') IS NOT NULL
	DROP TABLE [RISMigration].[dbo].[Ptnt_0016_DupMed];

SELECT * INTO [RISMigration].[dbo].[Ptnt_0016_DupMed]
	FROM (
		SELECT DISTINCT [pat_itn]
			, COUNT([pat_itn]) AS prev_med_rec_no_3_Count
			FROM (
				SELECT DISTINCT [prev_med_rec_no_3], [pat_itn]
					FROM [RISSource].[dbo].[patient]
					GROUP BY [prev_med_rec_no_3], [pat_itn]
				) AS A
			GROUP BY [pat_itn]
		) AS B
	WHERE prev_med_rec_no_3_Count > 1


PRINT '' PRINT '' PRINT '                                        Field 2 tests'

PRINT '' PRINT '' PRINT '                                        Field 2 referential integrity tests
against table hosp'

/**
	Field 2 is one of the fields that constitute the primary key and is a foreign key field of the
parent table hospital.
	This part of the script checks field 2 for orphan records.
	Ideally the output table should be empty. If not then the provided values are an issue
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 12 records. Output
to Ptnt_0020_Orph. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0020_Orph', 'U') IS NOT NULL
	DROP TABLE [RISMigration].[dbo].[Ptnt_0020_Orph];

SELECT A.[hosp]
	, A.[RecCount]
	INTO [RISMigration].[dbo].[Ptnt_0020_Orph]
	FROM (
		SELECT DISTINCT [hosp], COUNT([hosp]) AS RecCount
		FROM [RISSource].[dbo].[patient]
		GROUP BY [hosp]
		) AS A
	LEFT JOIN  [RISSource].[dbo].[hosp] AS B
	ON A.hosp = B.hosp
	WHERE B.hosp IS NULL


PRINT '' PRINT '' PRINT '                                        Field 3 tests'

/**
Field 3 [pt_rad_no] is the radiology number for the patient. It appears the field may in some
instances be empty.

The norm for [pt_rad_no] appears to be a 12-character string (digits only) padded with leading zeros
as required. Having said that,
```

```
there appears to be other standards appearing occasionally. For now, testing will proceed on this
basis and will be varied as and when
additional information becomes available.

It appears that a given [pat_itn] will be linked to only one [pt_rad_no] and vice versa.
**/

PRINT '' PRINT '' PRINT '                                        Field 3 format/content test'

/**
        Field 3 data format test. Ideally the output table should be empty. If not then the provided
values are an issue.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 9532 records. Output
to Ptnt_0030_BadStr.'
IF OBJECT_ID('RISMigration.dbo.Ptnt_0030_BadStr', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0030_BadStr];
SELECT [pat_itn]
        , [hosp]
    , [pt_rad_no]
        INTO [RISMigration].[dbo].[Ptnt_0030_BadStr]
        FROM [RISSource].[dbo].[patient]
        WHERE
        [pt_rad_no] IS NOT NULL AND
        [pt_rad_no] <> '' AND
        (       LEN([pt_rad_no]) <> 12 OR
                [pt_rad_no] LIKE '%[^0-9]%' OR
                [pt_rad_no] = '000000000000'
        ) -- Note - this assumes content norms which may be incomplete/inaccurate.
        ORDER BY pt_rad_no


PRINT '' PRINT '' PRINT '                                        Field 3 check for multiple values of field
1'

/**
        Field 3 is the patient radiology number (pat_rad_no) and presumably shouldn't relate to more
than one value of patient (pat_itn).
        This test lists records where there is more than one value of patient to a pat_rad_no.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 16570 records.
Output to Ptnt_0031_DupPat. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0031_DupPat', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0031_DupPat];

SELECT * INTO [RISMigration].[dbo].[Ptnt_0031_DupPat]
        FROM (
                SELECT DISTINCT [pt_rad_no]
                        , COUNT([pt_rad_no]) AS pat_itn_Count
                        FROM (
                                SELECT DISTINCT [pt_rad_no], [pat_itn]
                                        FROM [RISSource].[dbo].[patient]
                                        GROUP BY [pt_rad_no], [pat_itn]
                                ) AS A
                        GROUP BY [pt_rad_no]
                ) AS B
        WHERE pat_itn_Count > 1


PRINT '' PRINT '' PRINT '                                        Field 4 tests'

/**
Field 4 [pt_med_rec_no] is the medical record number for the patient. It appears the field must not be
empty.

The norm for [pt_med_rec_no] appears to be a 12-character string (digits only) padded with leading
zeros as required. Having said that,
there appears to be other standards appearing occasionally. For now, testing will proceed on this
basis and will be varied as and when
```

```
additional information becomes available.

It appears that a given [pat_itn] will be linked to only one [pt_med_rec_no] and vice versa.
**/


PRINT '' PRINT '' PRINT '                                        Field 4 format/content test'

/**
        Field 4 data format test. Ideally the output table should be empty. If not then the provided
values are an issue.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 10333 records.
Output to Ptnt_0040_BadStr.'
IF OBJECT_ID('RISMigration.dbo.Ptnt_0040_BadStr', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0040_BadStr];

SELECT [pat_itn]
        , [hosp]
    , [pt_med_rec_no]
        INTO [RISMigration].[dbo].[Ptnt_0040_BadStr]
        FROM [RISSource].[dbo].[patient]
        WHERE
        --[pt_med_rec_no] IS NOT NULL AND -- commented out to list records where the field is blank.
This condition may be revised.
        --[pt_med_rec_no] <> '' AND -- commented out to list records where the field is blank. This
condition may be revised.
        (       LEN([pt_med_rec_no]) <> 12 OR
                [pt_med_rec_no] LIKE '%[^0-9]%' OR
                [pt_med_rec_no] = '000000000000'
        ) -- Note - this assumes content norms which may be incomplete/inaccurate.
        ORDER BY pt_med_rec_no


PRINT '' PRINT '' PRINT '                                        Field 4 check for multiple values of field
1'

/**
        Field 3 is the patient medical number (pt_med_rec_no) and presumably shouldn't relate to more
than one value of patient (pat_itn).
        This test lists records where there is more than one value of patient to a pt_med_rec_no.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 16545 records.
Output to Ptnt_0041_DupPat. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0041_DupPat', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0041_DupPat];

SELECT * INTO [RISMigration].[dbo].[Ptnt_0041_DupPat]
        FROM (
                SELECT DISTINCT [pt_med_rec_no]
                        , COUNT([pt_med_rec_no]) AS pat_itn_Count
                        FROM (
                                SELECT DISTINCT [pt_med_rec_no], [pat_itn]
                                        FROM [RISSource].[dbo].[patient]
                                        GROUP BY [pt_med_rec_no], [pat_itn]
                                ) AS A
                        GROUP BY [pt_med_rec_no]
                ) AS B
        WHERE pat_itn_Count > 1


PRINT '' PRINT '' PRINT '                                        Field 5 tests'

/**
Field 5 [pt_ss_no] is apparently the social security number for the patient. Obviously Australia
doesn't have a social security number system.
Indications are that the field should contain the Medicare number or DVA number.

It appears that a given [pat_itn] will be linked to only one [pt_ss_no] and vice versa.
```

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```
**/

PRINT '' PRINT '' PRINT '                                        Field 5 content test'

PRINT '' PRINT 'This test should produce zero records however there are currently 7881 records. Output
to Ptnt_0050_List. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0050_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0050_List];

SELECT DISTINCT [pt_ss_no], COUNT([pt_ss_no]) as RecCount
        INTO [RISMigration].[dbo].[Ptnt_0050_List]
        FROM [RISSource].[dbo].[patient]
        GROUP BY [pt_ss_no]
        ORDER BY [pt_ss_no]


PRINT '' PRINT '' PRINT '                                        Field 5 check for multiple values of field
1'

/**
        Field 5 [pt_ss_no] is apparently the social security number for the patient and presumably
shouldn't relate to more than one value of patient (pat_itn).
        This test lists records where there is more than one value of patient to a pt_ss_no.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 885 records. Blank
values have not been excluded. Output to Ptnt_0051_DupPat. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0051_DupPat', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0051_DupPat];

SELECT * INTO [RISMigration].[dbo].[Ptnt_0051_DupPat]
        FROM (
                SELECT DISTINCT [pt_ss_no]
                        , COUNT([pt_ss_no]) AS pat_itn_Count
                        FROM (
                                SELECT DISTINCT [pt_ss_no], [pat_itn]
                                        FROM [RISSource].[dbo].[patient]
                                        GROUP BY [pt_ss_no], [pat_itn]
                                ) AS A
                        GROUP BY [pt_ss_no]
                ) AS B
        WHERE pat_itn_Count > 1


PRINT '' PRINT '' PRINT '                                        Field 6 tests'

PRINT '' PRINT '' PRINT '                                        Field 6 content test'

/**
        Field 6 [user_defined_key] purpose is currently not known.
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
Ptnt_0060_List. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0060_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0060_List];

SELECT [user_defined_key]
        , COUNT([user_defined_key]) AS RecCount
        INTO [RISMigration].[dbo].[Ptnt_0060_List]
        FROM [RISSource].[dbo].[patient]
        GROUP BY [user_defined_key]


PRINT '' PRINT '' PRINT '                                        Field 7 tests'

/**
Field 7 [prev_med_rec_no_1] is the previous medical record number 1 for the patient.
```

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```
The norm for [prev_med_rec_no_1] appears to be a 12-character string (digits only) padded with leading
zeros as required. Having said that,
there appears to be other standards appearing occasionally. For now, testing will proceed on this
basis and will be varied as and when
additional information becomes available.

It appears that a given [pat_itn] will be linked to only one [prev_med_rec_no_1] and vice versa.
**/

PRINT '' PRINT '' PRINT '                                        Field 7 format/content test'

/**
        Field 7 data format test. Ideally the output table should be empty. If not then the provided
values are an issue.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 101 records. Output
to Ptnt_0070_BadStr.'
IF OBJECT_ID('RISMigration.dbo.Ptnt_0070_BadStr', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0070_BadStr];
SELECT [pat_itn]
        , [hosp]
    , [prev_med_rec_no_1]
        INTO [RISMigration].[dbo].[Ptnt_0070_BadStr]
        FROM [RISSource].[dbo].[patient]
        WHERE
        [prev_med_rec_no_1] IS NOT NULL AND
        [prev_med_rec_no_1] <> '' AND
        (       LEN(prev_med_rec_no_1) <> 12 OR
                [prev_med_rec_no_1] LIKE '%[^0-9]%' OR
                [prev_med_rec_no_1] = '000000000000'
        ) -- Note - this assumes content norms which may be incomplete/inaccurate.
        ORDER BY [prev_med_rec_no_1]


PRINT '' PRINT '' PRINT '                                        Field 7 check for multiple values of field
1'

/**
        Field 7 is the patient previous medical record 1 number (prev_med_rec_no_1) and presumably
shouldn't relate to more than one value of patient (pat_itn).
        This test lists records where there is more than one value of patient to a prev_med_rec_no_1.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 356 records. Output
to Ptnt_0071_DupPat. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0071_DupPat', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0071_DupPat];

SELECT * INTO [RISMigration].[dbo].[Ptnt_0071_DupPat]
        FROM (
                SELECT DISTINCT [prev_med_rec_no_1]
                        , COUNT([prev_med_rec_no_1]) AS pat_itn_Count
                        FROM (
                                SELECT DISTINCT [prev_med_rec_no_1], [pat_itn]
                                        FROM [RISSource].[dbo].[patient]
                                        WHERE [prev_med_rec_no_1] <> ''
                                        GROUP BY [prev_med_rec_no_1], [pat_itn]
                                ) AS A
                        GROUP BY [prev_med_rec_no_1]
                ) AS B
        WHERE pat_itn_Count > 1


PRINT '' PRINT '' PRINT '                                        Field 8 tests'

/**
Field 8 [prev_med_rec_no_2] is the previous medical record number 2 for the patient.

The norm for [prev_med_rec_no_2] appears to be a 12-character string (digits only) padded with leading
zeros as required. Having said that,
```

```
there appears to be other standards appearing occasionally. For now, testing will proceed on this
basis and will be varied as and when
additional information becomes available.

It appears that a given [pat_itn] will be linked to only one [prev_med_rec_no_2] and vice versa.
**/

PRINT '' PRINT '' PRINT '                                        Field 8 format/content test'

/**
        Field 8 data format test. Ideally the output table should be empty. If not then the provided
values are an issue.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 8 records. Output to
Ptnt_0080_BadStr.'
IF OBJECT_ID('RISMigration.dbo.Ptnt_0080_BadStr', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0080_BadStr];
SELECT [pat_itn]
        , [hosp]
    , [prev_med_rec_no_2]
        INTO [RISMigration].[dbo].[Ptnt_0080_BadStr]
        FROM [RISSource].[dbo].[patient]
        WHERE
        [prev_med_rec_no_2] IS NOT NULL AND
        [prev_med_rec_no_2] <> '' AND
        (       LEN(prev_med_rec_no_2) <> 12 OR
                [prev_med_rec_no_2] LIKE '%[^0-9]%' OR
                [prev_med_rec_no_2] = '000000000000'
        ) -- Note - this assumes content norms which may be incomplete/inaccurate.
        ORDER BY [prev_med_rec_no_2]


PRINT '' PRINT '' PRINT '                                        Field 8 check for multiple values of field
1'

/**
        Field 8 is the patient previous medical record 2 number (prev_med_rec_no_2) and presumably
shouldn't relate to more than one value of patient (pat_itn).
        This test lists records where there is more than one value of patient to a prev_med_rec_no_2.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 3 records. Output to
Ptnt_0081_DupPat. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0081_DupPat', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0081_DupPat];

SELECT * INTO [RISMigration].[dbo].[Ptnt_0081_DupPat]
        FROM (
                SELECT DISTINCT [prev_med_rec_no_2]
                        , COUNT([prev_med_rec_no_2]) AS pat_itn_Count
                        FROM (
                                SELECT DISTINCT [prev_med_rec_no_2], [pat_itn]
                                        FROM [RISSource].[dbo].[patient]
                                        WHERE [prev_med_rec_no_2] <> ''
                                        GROUP BY [prev_med_rec_no_2], [pat_itn]
                                ) AS A
                        GROUP BY [prev_med_rec_no_2]
                ) AS B
        WHERE pat_itn_Count > 1


PRINT '' PRINT '' PRINT '                                        Field 9 tests'

/**
Field 8 [prev_med_rec_no_3] is the previous medical record number 3 for the patient.

The norm for [prev_med_rec_no_3] appears to be a 12-character string (digits only) padded with leading
zeros as required. Having said that,
there appears to be other standards appearing occasionally. For now, testing will proceed on this
basis and will be varied as and when
```

```
additional information becomes available.

It appears that a given [pat_itn] will be linked to only one [prev_med_rec_no_3] and vice versa.
**/

PRINT '' PRINT '' PRINT '                                    Field 9 format/content test'

/**
        Field 8 data format test. Ideally the output table should be empty. If not then the provided
values are an issue.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 3 records. Output to
Ptnt_0090_BadStr.'
IF OBJECT_ID('RISMigration.dbo.Ptnt_0090_BadStr', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0090_BadStr];
SELECT [pat_itn]
        , [hosp]
    , [prev_med_rec_no_3]
        INTO [RISMigration].[dbo].[Ptnt_0090_BadStr]
        FROM [RISSource].[dbo].[patient]
        WHERE
        [prev_med_rec_no_3] IS NOT NULL AND
        [prev_med_rec_no_3] <> '' AND
        (       LEN(prev_med_rec_no_3) <> 12 OR
                [prev_med_rec_no_3] LIKE '%[^0-9]%' OR
                [prev_med_rec_no_3] = '000000000000'
        ) -- Note - this assumes content norms which may be incomplete/inaccurate.
        ORDER BY [prev_med_rec_no_3]


PRINT '' PRINT '' PRINT '                                    Field 9 check for multiple values of field
1'

/**
        Field 9 is the patient previous medical record 3 number (prev_med_rec_no_3) and presumably
shouldn't relate to more than one value of patient (pat_itn).
        This test lists records where there is more than one value of patient to a prev_med_rec_no_3.
**/

PRINT '' PRINT 'This test should produce zero records however there are currently 0 records. Output to
Ptnt_0091_DupPat. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0091_DupPat', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0091_DupPat];

SELECT * INTO [RISMigration].[dbo].[Ptnt_0091_DupPat]
        FROM (
                SELECT DISTINCT [prev_med_rec_no_3]
                        , COUNT([prev_med_rec_no_3]) AS pat_itn_Count
                        FROM (
                                SELECT DISTINCT [prev_med_rec_no_3], [pat_itn]
                                        FROM [RISSource].[dbo].[patient]
                                        WHERE [prev_med_rec_no_3] <> ''
                                        GROUP BY [prev_med_rec_no_3], [pat_itn]
                                ) AS A
                        GROUP BY [prev_med_rec_no_3]
                ) AS B
        WHERE pat_itn_Count > 1


PRINT '' PRINT '' PRINT '                                    Field 10 tests'

/**
Field 10 [pt_intfc_sts] is the patient infection status.
**/

PRINT '' PRINT '' PRINT '                                    Field 10 format/content test'

/**
        This test lists permutations and counts.
**/
```

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```
PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
Ptnt_0100_List. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0100_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0100_List];

SELECT [pt_intfc_sts]
        , COUNT([pt_intfc_sts]) AS RecCount
        INTO [RISMigration].[dbo].[Ptnt_0100_List]
        FROM [RISSource].[dbo].[patient]
        GROUP BY [pt_intfc_sts]


PRINT '' PRINT '' PRINT '                                       Field 11 tests'

/**
Field 11 [mrn_assign_auth_cd] is the patient infection status.
**/

PRINT '' PRINT '' PRINT '                                       Field 11 format/content test'

/**
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
Ptnt_0110_List. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0110_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0110_List];

SELECT [mrn_assign_auth_cd]
        , COUNT([mrn_assign_auth_cd]) AS RecCount
        INTO [RISMigration].[dbo].[Ptnt_0110_List]
        FROM [RISSource].[dbo].[patient]
        GROUP BY [mrn_assign_auth_cd]


PRINT '' PRINT '' PRINT '                                       Field 12 tests'

/**
Field 12 [pt_med_rec_no_ext] is understood to be a copy of the field 4 [pt_med_rec_no] without the
leading zeros.
**/

PRINT '' PRINT '' PRINT '                                       Field 12 format/content test'

/**
        This test lists records that don't match the numerics-only nature of the field.
**/

PRINT '' PRINT 'List of values. Output to Ptnt_0120_List. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0120_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0120_List];

PRINT '' PRINT 'This test should produce zero records however there are currently 3 records. Output to
Ptnt_0120_BadStr.'
IF OBJECT_ID('RISMigration.dbo.Ptnt_0120_BadStr', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0120_BadStr];

SELECT [pat_itn]
        , [hosp]
    , [pt_med_rec_no_ext]
        INTO [RISMigration].[dbo].[Ptnt_0120_BadStr]
        FROM [RISSource].[dbo].[patient]
        WHERE
        [pt_med_rec_no_ext] IS NOT NULL AND
        [pt_med_rec_no_ext] <> '' AND
        [pt_med_rec_no_ext] LIKE '%[^0-9]%' -- Note - this assumes content norms which may be
incomplete/inaccurate.
        ORDER BY [pt_med_rec_no_ext]
```

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```
PRINT '' PRINT '' PRINT '                                        Field 12 versus field 4 test - this test
is likely to have incomplete criteria re leading zeros on [pt_med_rec_no_ext]'

/**
        This test lists records that don't match field 4 without the leading zeros.
**/

PRINT '' PRINT 'List of values. Output to Ptnt_0121_List. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0121_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0121_List];

SELECT [pat_itn]
      ,[hosp]
      ,[pt_med_rec_no]
      ,[pt_med_rec_no_ext]
        INTO [RISMigration].[dbo].[Ptnt_0121_List]
        FROM [RISSource].[dbo].[patient]
        WHERE
                -- looks for where pt_med_rec_no exists (all records?) and pt_med_rec_no_ext doesn't
exist
                ([pt_med_rec_no] <> '' AND ([pt_med_rec_no_ext] = '' OR [pt_med_rec_no_ext] IS NULL))
                OR
                -- looks for a first character of anything other than 1-9 on pt_med_rec_no_ext
                LEFT([pt_med_rec_no_ext],1) LIKE '%[^1-9]%'
                OR
                -- the next two bits break up [pt_med_rec_no] into left and right based on the length
of [pt_med_rec_no_ext]
                        -- looks for where the right end of [pt_med_rec_no] doesn't match
[pt_med_rec_no_ext]
                        RIGHT([pt_med_rec_no], LEN([pt_med_rec_no_ext])) <> [pt_med_rec_no_ext]
                OR
                        -- looks for where the left end of [pt_med_rec_no] contains anythign but zeros
                        LEFT([pt_med_rec_no], LEN([pt_med_rec_no]) - LEN([pt_med_rec_no_ext])) LIKE
'%[^0]%'


PRINT '' PRINT '' PRINT '                                        Field 13 tests'

/**
Field 13 [mrn_assign_auth_cd] is the patient infection status.
**/

PRINT '' PRINT '' PRINT '                                        Field 13 format/content test'

/**
        This test lists permutations and counts.
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
Ptnt_0130_List. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0130_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0130_List];

SELECT [pt_med_rec_no_chk_digit]
        , COUNT([pt_med_rec_no_chk_digit]) AS RecCount
        INTO [RISMigration].[dbo].[Ptnt_0130_List]
        FROM [RISSource].[dbo].[patient]
        GROUP BY [pt_med_rec_no_chk_digit]


PRINT '' PRINT '' PRINT '                                        Field 14 tests'

/**
Field 14 [mrn_assign_auth_cd] is the patient infection status.
**/

PRINT '' PRINT '' PRINT '                                        Field 14 format/content test'

/**
        This test lists permutations and counts.
```

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```
**/

PRINT '' PRINT 'List of values and counts. Blank values have not been excluded. Output to
Ptnt_0140_List. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_0140_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_0140_List];

SELECT [user_key_assign_auth_cd]
        , COUNT([user_key_assign_auth_cd]) AS RecCount
        INTO [RISMigration].[dbo].[Ptnt_0140_List]
        FROM [RISSource].[dbo].[patient]
        GROUP BY [user_key_assign_auth_cd]


PRINT '' PRINT '' PRINT '                                       Medical Record Number Field tests'

PRINT '' PRINT '' PRINT '                                       Multiple Occurrence within record test'

/**
        There are multiple fields related to the patient's medical record number. Anecdotal evidence
indicates the medical record number should not be repeated within a record.
        This test identifies records that fail this test.
**/

PRINT '' PRINT 'List of records with duplicate numbers. This test should produce zero records however
there are currently 1998 records. Output to Ptnt_MMM0_List. '
IF OBJECT_ID('RISMigration.dbo.Ptnt_MMM0_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Ptnt_MMM0_List];

SELECT [pat_itn]
      ,[hosp]
      ,[pt_med_rec_no]
      ,[prev_med_rec_no_1]
      ,[prev_med_rec_no_2]
      ,[prev_med_rec_no_3]
        INTO [RISMigration].[dbo].[Ptnt_MMM0_List]
        FROM [RISSource].[dbo].[patient]
        -- check all 4 fields against each-other to find repeating values
        WHERE  ([pt_med_rec_no] = [prev_med_rec_no_1] AND [pt_med_rec_no] <> '' AND
[prev_med_rec_no_1] <> '')
                OR ([pt_med_rec_no] = [prev_med_rec_no_2] AND [pt_med_rec_no] <> '' AND
[prev_med_rec_no_2] <> '')
                OR ([pt_med_rec_no] = [prev_med_rec_no_3] AND [pt_med_rec_no] <> '' AND
[prev_med_rec_no_3] <> '')
                OR ([prev_med_rec_no_1] = [prev_med_rec_no_2] AND [prev_med_rec_no_1] <> '' AND
[prev_med_rec_no_2] <> '')
                OR ([prev_med_rec_no_1] = [prev_med_rec_no_3] AND [prev_med_rec_no_1] <> '' AND
[prev_med_rec_no_3] <> '')
                OR ([prev_med_rec_no_2] = [prev_med_rec_no_3] AND [prev_med_rec_no_2] <> '' AND
[prev_med_rec_no_3] <> '')
```

Messages on execution– for information only.

This is the message output of SQL during execution of this code. It is included as it may be of use to relevant application managers in understanding the analysis in detail.

```
                                Field 1 & 2 Primary Key test

This test should produce zero records. Output to Ptnt_0010_DupPK.

(0 row(s) affected)

                                Field 1 tests
```

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Field 1 referential integrity tests against table pat_name

This test should produce zero records however there are currently 115 records. Output to Ptnt_0010_Orph.

(115 row(s) affected)

Field 1 check for multiple values of field 3

This test should produce zero records however there are currently 27482 records. Output to Ptnt_0011_DupRad.

(27578 row(s) affected)

Field 1 check for multiple values of field 4

This test should produce zero records however there are currently 26907 records. Output to Ptnt_0012_DupMed.

(27003 row(s) affected)

Field 1 check for multiple values of field 5

This test should produce zero records however there are currently 1269 records. Output to Ptnt_0013_DupSS.

(1271 row(s) affected)

Field 1 check for multiple values of field 7

This test should produce zero records however there are currently 169276 records. Output to Ptnt_0014_DupMed.

(169417 row(s) affected)

Field 1 check for multiple values of field 8

This test should produce zero records however there are currently 3035 records. Output to Ptnt_0015_DupMed.

(3041 row(s) affected)

Field 1 check for multiple values of field 9

This test should produce zero records however there are currently 239 records. Output to Ptnt_0016_DupMed.

(239 row(s) affected)

Field 2 tests

Field 2 referential integrity tests against table hosp

This test should produce zero records however there are currently 12 records. Output to Ptnt_0020_Orph.

(12 row(s) affected)

Field 3 tests

Field 3 format/content test

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This test should produce zero records however there are currently 9532 records. Output to Ptnt_0030_BadStr.

(9532 row(s) affected)

Field 3 check for multiple values of field 1

This test should produce zero records however there are currently 16570 records. Output to Ptnt_0031_DupPat.

(16587 row(s) affected)

Field 4 tests

Field 4 format/content test

This test should produce zero records however there are currently 10333 records. Output to Ptnt_0040_BadStr.

(9748 row(s) affected)

Field 4 check for multiple values of field 1

This test should produce zero records however there are currently 16545 records. Output to Ptnt_0041_DupPat.

(16562 row(s) affected)

Field 5 tests

Field 5 content test

This test should produce zero records however there are currently 7881 records. Output to Ptnt_0050_List.

(7901 row(s) affected)

Field 5 check for multiple values of field 1

This test should produce zero records however there are currently 885 records. Blank values have not been excluded. Output to Ptnt_0051_DupPat.

(885 row(s) affected)

Field 6 tests

Field 6 content test

List of values and counts. Blank values have not been excluded. Output to Ptnt_0060_List.

(498151 row(s) affected)

Field 7 tests

Field 7 format/content test

This test should produce zero records however there are currently 101 records. Output to Ptnt_0070_BadStr.

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(101 row(s) affected)

Field 7 check for multiple values of field 1

This test should produce zero records however there are currently 356 records. Output to Ptnt_0071_DupPat.

(357 row(s) affected)

Field 8 tests

Field 8 format/content test

This test should produce zero records however there are currently 8 records. Output to Ptnt_0080_BadStr.

(8 row(s) affected)

Field 8 check for multiple values of field 1

This test should produce zero records however there are currently 3 records. Output to Ptnt_0081_DupPat.

(3 row(s) affected)

Field 9 tests

Field 9 format/content test

This test should produce zero records however there are currently 3 records. Output to Ptnt_0090_BadStr.

(3 row(s) affected)

Field 9 check for multiple values of field 1

This test should produce zero records however there are currently 0 records. Output to Ptnt_0091_DupPat.

(0 row(s) affected)

Field 10 tests

Field 10 format/content test

List of values and counts. Blank values have not been excluded. Output to Ptnt_0100_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(1 row(s) affected)

Field 11 tests

Field 11 format/content test

List of values and counts. Blank values have not been excluded. Output to Ptnt_0110_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(1 row(s) affected)

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Field 12 tests

Field 12 format/content test

List of values. Output to Ptnt_0120_List.

This test should produce zero records however there are currently 3 records. Output to Ptnt_0120_BadStr.

(3 row(s) affected)

Field 12 versus field 4 test - this test is likely to have incomplete criteria re leading zeros on [pt_med_rec_no_ext]

List of values. Output to Ptnt_0121_List.

(482228 row(s) affected)

Field 13 tests

Field 13 format/content test

List of values and counts. Blank values have not been excluded. Output to Ptnt_0130_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(1 row(s) affected)

Field 14 tests

Field 14 format/content test

List of values and counts. Blank values have not been excluded. Output to Ptnt_0140_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(2 row(s) affected)

Medical Record Number Field tests

Multiple Occurrence within record test

List of records with duplicate numbers. This test should produce zero records however there are currently 1998 records. Output to Ptnt_MMM0_List.

(1998 row(s) affected)

Heland, Rebecca (Health)

From: [redacted] (Health)
Sent: Thursday, 23 November 2017 7:29 PM
To: Cook, Sandra (Health); O'Halloran, Peter (Health); Duggan, Mark (Health); [redacted] Luck, Surangani (Health)
Cc: [redacted] (Health); Crossley, Nick; [redacted] (Health)
Subject: IDIS Executive Management Meeting – Meeting with Siemens and AGFA - PACS migration [SEC=UNCLASSIFIED]

Hello all,

This evening we have had a conference call between AGFA and Siemens technical people to try and resolve the PACS image migration issue.

Outcomes of this meeting:

The group agreed to conduct further analysis of the SDC option proposed by Siemens to ensure that ACT Health acquires the most efficient and effective option for PACS image migration.

There are currently PACS image migrations being conducted between Siemens and AGFA, the teams will exchange the location information and AGFA will explore and report back.

Siemens will explore options to trial the SDC tool and will report back to the Project. If agreed, we will work together to conduct a performance trial to demonstrate the speed of this tool without comprising the data quality or current PACS production.

This was a good meeting, but there is much more work that is needed. Can I please request that this is treated with urgency and that a resolution is found quickly. If needed the teams will reconvene to resolve next week.

Happy to discuss

[redacted]

[redacted]
Phone: 02 6174 8729 | Mobile: [redacted] | E-Mail : [redacted]act.gov.au
Future Capability & Governance | Digital Solutions Division | Health Directorate | ACT Government
Building 1, Lv 10 Canberra Hospital, Garran ACT | PO Box 11, WODEN ACT 2606 | www.act.gov.au

ACT Government Health

CORRESPONDENCE CLEARANCE

SUBJECT: Siemens PACS Data Migration

NUMBER: COR17/24028 **DATE DUE:** _____

Director-General - ACT Health: _____ Date: 22-12-17

Deputy Director-General - Corporate: _____ Date: _____

Deputy Director-General - Canberra Hospital & Health Services: _____ Date: _____

Deputy Director-General - Innovation: _____ Date: _____

Deputy Director-General - Quality, Governance and Risk: _____ Date: _____

Deputy Director-General - Population Health Protection & Prevention: _____ Date: _____

Deputy Director-General - Performance, Reporting and Data: _____ Date: _____

Contextually Correct ☑ Grammatically Correct ☑ Spell Checked ☑

Executive Director - Area nam Digital Solutions Division _____ Date: 22 Dec 2017

Senior Manager - Area nam MARC DUGGAN _____ Medical Imaging Date: 22/12/17.

Senior Manager, Ministerial and Government: _____ Date: _____

Senior Manager - Media and Strategic Communications: _____ Date: _____

Executive - Area nan Sandra COOK DSD _____ Date: 22/12/17

Manager - Area nan _____ Date: _____

Professional Leads: _____ Date: _____

Other: _____ Date: _____

ACT Government Health

CORRESPONDENCE COVER SHEET

Correspondent:

Record Number: COR17/24028 **Date Due:** .....

Topic: Siemens PACS Data Migration

Action Required:						
	Draft Response	No	Info Only	No	Brief to Minister	No
	Reply Directly	No	Action as Necessary	No	Comments to D-G	No
	Brief to D-G	No	For Discussion	No	Coordinate Response	No
	Action by Group	No	Advice	No	Full Speech	No
	Ministerial Response	No				

Assignee: Devries, Melissa since 22/12/2017 at 10:40 AM

Comments for Cover Sheet:

ACT Government
Health

DIRECTOR-GENERAL MINUTE

TRIM Reference No. COR17/24028

SUBJECT:	Integrated Diagnostic Imaging Solution (IDIS) RIS Data Migration Services & RISPACS Support & Maintenance Agreement extension

From:	Margaret McLeod, Deputy Director-General, Corporate
Through:	Peter O'Halloran, Chief Information Officer Mark Duggan, Manager Medical Imaging Sandra Cook, Director, Future Capability and Governance

Critical Date:	December 2017
Reason:	To ensure that the current RIS-PACS application is supported until replacement application (IDIS) is released and to seek approval for the expenditure for time critical RIS data migration

Recommendations

That you:

Note the information contained in this brief	*NOTED* *PLEASE DISCUSS*
Approve the expenditure of $224,246 (inc GST) for Siemens RIS Data Migration Professional Services	*AGREED* *NOT AGREED* *PLEASE DISCUSS*
Approve the expenditure of $58,906.10 (inc GST) for Siemens PACS Data Migration Professional Services	*AGREED* *NOT AGREED* *PLEASE DISCUSS*
Approve the expenditure of $213,565.00 (inc GST) for the Siemens RISPACS support & maintenance agreement extension	*AGREED* *NOT AGREED* *PLEASE DISCUSS*

.....

Chris Bone
A/g Director-General
ACT Health

22 December 2017

ACT Government
Health

DIRECTOR-GENERAL MINUTE

Purpose

To see your approval for the expenditure of $224,246 for Siemens RIS Data Migration Professional Services, $58,906.10 for Siemens PACS Data Migration Professional Services and approve the expenditure of $213,565.00 for the Siemens RISPACS support & maintenance agreement extension to 30 June2018.

Background

Data Migration Services

On 17 August 2017 approval was provided for an initial purchase order for Siemens (DGC17/1570) to engage resources under the existing contract to estimate work packages required for Data Migration from the incumbent system to the new Agfa system. Since this time, Siemens have provided two final quotations for fixed price services to ensure the RIS data is migrated (Attachment A) and PACS data is migrated (Attachment B) within agreed project timelines.

RISPACS Support Extension

Following a procurement process request for Tender T05573 in 2006, the RISPACS contract was executed on 16 October 2007 between the ACT (represented by ACT Health) and Siemens Ltd. ACN 004 347 880 (Siemens Ltd), for an initial duration of four years with provision for its extension by agreement of the parties. The contract has previously been novated from Siemens Ltd to Siemens Healthcare by letter. The contract has provided for the implementation and support of RIS-PACs at both the Canberra and Calvary public hospitals. The RIS-PACS solution incorporates both software and hardware and is fully vendor managed by Siemens Healthcare.

The duration of the contract was last extended to 31 July 2017 to provide for the continuation of RIS-PACS support and maintenance by Siemens Healthcare. This minute is seeking to extend the agreement to 30 June 2018.

ACT Health has recently signed on with a new RIS-PACS provider (AGFA), Integrated Diagnostic Imaging Solutions (IDIS) which will be implemented in May 2018 and as such until this time the current contract with Siemens Healthcare needs to be extended through to June 30, 2018. Siemens have provided a quotation for this support and maintenance agreement extension (Attachment C).

ACT Government Health

DIRECTOR-GENERAL MINUTE

In addition ACT Health is currently working towards a Master Services Agreement (MSA). Whilst this is being progressed vendors have agreed to provide shorter contract extensions to cover the time period that it takes to implement a MSA for ACT Health.

Issues

Data Migration Services

Siemens support the current RIS-PACS Solution. The RIS and PACS data migration services being provided by Siemens are critical to ensuring the IDIS project is delivered with 100% of the RIS and PACS data migrated and that we can meet the May 2018 go live date. Siemens are the incumbent vendor and the only provider who can provide the professional services needed.

RISPACS Support Extension

Siemens Healthcare is the current contracted provider to ACT Health for support and maintenance service for RISPACS. The software element of RISPACS is proprietary to Siemens Healthcare and the hardware in place has been supplied by Siemens Healthcare. To obtain the needed support and maintenance service from an alternative vendor, particularly in respect of the existing software element would require a sub-licensing arrangement between Siemens Healthcare and the alternative vendor, to which Siemens Healthcare may not be agreeable. In such a case there would be a likely increase in cost to ACT Health.

Benefits/Sensitivities

Data Migration Services

The professional services will assist in ensuring the risk associated with data migration is managed.

RISPACS Support Extension

Without proceeding with the requested extension ACT Health's RISPACS is put at a clinical risk, which could result in a severe impact to service delivery with delays to patient flow if the RISPACS was to malfunction. Additionally without a contract extension/maintenance agreement in place ACT Health is potentially exposed to higher costs for any malfunctions.

Heland, Rebecca (Health)

From: [redacted] <[redacted]>
Sent: Friday, 8 December 2017 1:21 PM
To: Crossley, Nick; [redacted] (Health); [redacted] (Health); [redacted] (Health)
Cc: [redacted] (Health); Duggan, Mark (Health)
Subject: NOTES: Siemens Telecon - RIS Data Analysis - Canberra Hospital - 6/12/17

Hi [redacted]
Please find attached my notes from the meeting on Wednesday.
Further to this, I can confirm as of today we are still awaiting an error free extract to be delivered for both RIS and PACS. We are hoping to have these to you early next week.
With regards to 3. below, I was asked to investigate whether we could modify the extract and modify the accession numbers so these are unique. As per the SoW, as Siemens cannot guarantee the quality of data if changes like this are made, we encourage this change to be made at the Agfa end. There was an out of scope topic in the SoW as per the below.

Transition-Out Activities and Documents Not In-Scope	
Execution of any data transformation during the extract process.	ACT Health will be responsible for any transformation of data prior to loading into the Agfa system

In saying that, happy to discuss further though if this is not viable.

Meeting Minutes – 6th December 2017
Attendees: [redacted]

1. [redacted] will cover [redacted] whilst on leave so all correspondence to include both [redacted] and [redacted]
2. RIS/PACS Test Extract

a. [redacted] updated team on progress since last week

i. Test extract triaged by [redacted] Friday last week
ii. Errors found in both RIS and PACS extracts
ii. Received new PACS extract Monday, further issues found
v. Received new RIS extract Tuesday, further issues found
v. Expect new extracts Thursday, if all OK can send through Friday (earliest)

b. Team discussed accuracy of extracts being an issue, and [redacted] seeing firsthand what [redacted] was facing with earlier extracts
c. [redacted] confirmed this is the most time consuming task of the process. Once test extract in place and accurate, further extracts will be easy to generate
d. Team acknowledged we need to ensure the extract is correct from the source, as opposed to modifying the extracts themselves to meet timelines.
e. [redacted] confirmed timeline of 12th Dec on track
f. [redacted] confirmed date of 12th Dec in SoW should have indicated a completion of the test migration as opposed to delivery of test extract

3. Duplicate Accession Number Issue

g. [redacted] asked whether Siemens can modify extract make accession numbers unique
h. [redacted] agreed to investigate

4. PACS Migration

i. [redacted] indicated SDC pilot proposal likely to proceed
j. Siemens will need to receive requests from the Agfa RIS to move studies in that order
k. SDC Pilot likely to be requested for Jan
l. GM to tentatively schedule resources for January

5. PACS Extract

m. [redacted] request a new single PACS database extract be produced by Siemens. [redacted] will investigate if possible
n. [redacted] requested a network drive

6. Timeline clarification

o. [redacted] asked for clarification of how migration activity sits on critical path of the project
p. [redacted] confirmed important that there is sufficient time for 2 years studies to be migrated prior to Agfa go-live
q. [redacted] indicated a successfully partial migration needs to be completed by 2nd Feb
r. Plan is to test full test migration during Feb
s. Production migration to begin start of March

Best regards

[redacted]
[redacted]
Siemens Healthcare Pty Ltd (Australia)
885 Mountain Highway
Bayswater, 3153
Mobile: [redacted]
Work: +61 (0)3 9721 7507
mailto[redacted]
www.healthcare.siemens.com.au

SIEMENS Healthineers

-----Original Appointment-----
From: Crossley, Nick [mailto:Nick.Crossley@act.gov.au]
Sent: Thursday, 12 October 2017 4:43 PM
To: Crossley, Nick; [redacted] (Health); [redacted] (Health); [redacted] (HC APC AUS DI S NR)
Cc: [redacted] (Health)
Subject: Siemens Telecon - RIS Data Analysis - Canberra Hospital
When: Occurs every Wednesday effective 18/10/2017 until 20/12/2017 from 2:00 PM to 3:00 PM AUS Eastern Standard Time.
Where: WebEx - Telcon (see below)
DO NOT DELETE OR CHANGE ANY OF THE TEXT BELOW THIS LINE
Nick Crossley has scheduled this WebEx meeting.
Siemens Telecon - RIS Data Analysis - Canberra Hospital
Host: Nick Crossley
When it's time, start or join the WebEx meeting from here:
https://webex-client.dpa.act.gov.au/orion/joinmeeting.do?MK=998017969
Access Information
Meeting Number: 998 017 969
Meeting Password: This meeting does not require a password.
Audio Connection
74720 (Internal (ACT Government))
02 62074720 (National)
+612 62074720 (International)
Access Code:
998 017 969

Hosts, need your host access code or key? Go to the meeting information page:
https://webex-client.dpa.act.gov.au/orion/meeting/meetingInfo?MeetingKey=998017969
Delivering the power of collaboration
The webex-client.dpa.act.gov.au team

The Canberra Hospital

Radiology PACS Migration Services

28 November 2017

SIEMENS Healthineers

Quotation Number: 1-EZXRQS-02

Your Contact: [redacted]

Direct Line:
Mobile No:
e-mail: [redacted]

Your reference:
Our reference:
Date: 28.11.2017

Web Address: www.siemens.com.au/healthcare

28 November 2017

The Canberra Hospital
Yamba Drive
GARRAN, ACT, 2605

Thank you for providing Siemens Healthcare with the opportunity to bid for your project. Siemens have been active in Australia and New Zealand for more than 135 years. Siemens is a trusted partner and with our technology based solutions, we address many of the critical issues facing Australia today.

We are confident that our offering will bring advantages in superior quality, workflow and trendsetting applications. These clinical outcomes are complemented by a maximum return on your investment.

Our detailed proposal is structured as follows:

Section A - Executive Summary, including a brief 'at a glance' system overview with pricing.

Section B - Provides detailed information on the configuration selected to match your needs. Further extensive technical information and specifications are also provided. Any additional extra cost options are detailed in this section.

Section C - Details our commercial qualifications on our offer and terms and conditions for your reference.

We trust this proposal meets and exceeds both your clinical and business requirements.

Should you require any assistance please do not hesitate to call me on [redacted]

Yours sincerely
Siemens Healthcare Pty Ltd

[redacted]

Section A – Executive Summary

Our Offering

Siemens Healthcare solutions are designed to make your workday easier and clinically more successful. Each day, from your very first patient, our technology will acquire images with the finest diagnostic detail.

Siemens Healthcare innovative imaging technology is supported by outstanding workflow concepts together with a broad spectrum of dedicated, advanced applications. We support your day-to-day clinical activity with simple, automated workflow, ensuring high throughput.

Our award winning designs incorporate the highest level of environmental sustainability throughout the complete product life cycle. With our technology and expertise in project management we deliver:

- fast and easy installation
- low life cycle costs for increased return on investment
- compact system designs to minimize space requirements.

We provide you with a powerful, affordable system that supports the clinical and financial success of its users. In addition, our service offerings and life program provide continuous support encompassing:

- upgrades and migration
- stay competitive with up-to-date systems
- education and training
- broaden your knowledge and expertise
- services and support
- feel confident in our proactive service solutions and reliable support offerings
- information and communication
- be informed, get connected.

Upgrade, installed based options

Siemens Healthcare keeps you at the forefront of trendsetting applications and innovative technology. Opportunities to expand your systems capabilities even further are often available. With new innovative applications, workflow enhancements and technology you can keep your system state of the art.

Revolutionary UPTIME

We provide quality service support designed with one primary objective:
To help our customers develop sustained higher-level productivity, maximise performance and increase efficiency.

This encompasses:

- proactive support
- guaranteed UPTIME
- local responsiveness
- lifecycle responsibility.

Life

Siemens Healthcare has the unique customer care solution that helps you obtain the most from your investment. From the moment of your purchase, Life surrounds you with an array of programs and support that enables the continuous development of skills, productivity and technology. This allows you and your team to broaden your capabilities, resulting in increased profitability, as well as taking patient care to the next level.

Pricing Summary

Description	Qty	Price (excl GST)	Price (Inc GST)
Radiology PACS Data Migration Services	1	$53,551.00	$58,906.10

Section B – Detailed Configuration

Item	Description
8	[redacted]
5	[redacted]
5	[redacted]

[redacted]

[redacted]

Section C – Qualifications

1. [redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

DIGITAL SOLUTIONS DIVISION

ACT Government Health

STATEMENT OF WORK
Integrated Diagnostic Imaging Solution
Siemens RIS-PACS Solution
PACS Transition-Out

DOCUMENT CONTROL

Version	Date	Created By	Description
00.01	26/10/2017	[redacted]	Initial Draft
00.02	26/10/2017	Nick Crossley	Update and review
00.03	01/11/17	[redacted]	Incorporated comments from Executive Sponsor and Program Manager.
00.04	28/11/17	[redacted]	Siemens review with tracked changes

DOCUMENT APPROVAL

Version	Name and Position	Endorsement Date
00.02	[redacted] IDIS Project Director	31/10/17
00.02	Sarah Norton – UCPH Digital Solutions Program Manager	31/10/17
00.02	Mark Duggan – A/g Manager Medical Imaging Canberra Hospital & Health Services	31/10/17

DOCUMENT DISTRIBUTION

Name	Title	Date of Issue	Version
[redacted]	IDIS Project Director	26/10/17	00.01
Nick Crossley	SSICT Project Manager		
[redacted]	IDIS Delivery Manager		
[redacted]	Siemens IT Operations Manager - Applications		
[redacted]	Siemens Integration Specialist		
Sarah Norton	Program Manager	27/10/17	00.02

RELATED DOCUMENTS

Version	Name	Endorsed By
Final	Siemens Professional Services (quote 1-EC5QAN)	ACTH Director General
Final	Purchase order H1806730	n\a
V0.5	SoW Siemens RIS Transition Out	ACTH

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1. Introduction

The ACT Health Directorate has procured the [redacted] Enterprise Imaging (AHEI) integrated Radiology Information System (RIS) and Picture Archiving and Communication System (PACS) solution to replace the Siemens RIS-PACS solution that currently supports the Medical Imaging Departments at Canberra Hospital (TCH) and Calvary Hospital (Calvary).

The system licensing and support contract for this current solution is between the ACT Health Directorate (ACT Health) and Siemens.

ACT Health requires Siemens to engage with ACT Health, subject to the requirements of this Statement of Work (SoW), in the technical transition from Siemens to [redacted]

1.1. Purpose and objective

This document provides the Statement of Work (SoW) required for Siemens to support the PACS Migration component of the project and in turn provide a formal quotation for the services/activities contained within the scope section of this document.

To facilitate a timely and accurate quote from Siemens, as well as clearly documenting scope of work, this document explains the roles, responsibilities and deliverables/outcomes required of Siemens to fully participate in the PACS technical migration to [redacted] Enterprise Imaging (AHEI).

This document formally sets out the required outcomes, deliverable outputs and consulting activities needed from Siemens to complete the PACS migration.

ACT Health's objectives are as follows.

- Transition to the new Agfa AHEI system when the technical migration processes are complete.
- Transition to the new Agfa AHEI with no loss of clinically relevant data. This objective requires Siemens to support the ACT Health Discovery and Knowledge Transfer activities, through sharing documents and providing consulting expertise to ACT Health in the following areas.
  - Siemens PACS data migration methodology and toolsets;
  - Siemens PACS database schema design – including:
    - the physical database models for Siemens PACS subsystems.
  - Facilitation of source to target mapping between the Siemens PACS database structures and the Data Migration file templates provided by [redacted]
  - Data migration testing support.
  - Support for full Quality Assurance processes for the validation of migrated data, including management and audit reports and the checking of specific items via both the Siemens and Agfa applications.

1.2. Roles and Responsibilities

Roles	Responsibilities
ACTH	
IDIS Project Director ([redacted])	Oversee overall SoW process Manage Issues and Risk escalations Manage Budget Coordinate with business stakeholders on decision
Shared Services ICT PM (Nick Crossley)	Identify risk and issues, particularly any involving patient data\records Participation in regular\recurring meetings Assist with technical \infrastructure activities
IDIS Delivery Manager ([redacted])	Identify risk and issues, particularly any involving patient data\records Participation in regular\recurring meetings Oversee overall Data Migration activities
Data Analyst ([redacted])	Identify risk and issues, particularly any involving patient data\records Participation in regular\recurring meetings
Siemens	
Professional Services Manager ([redacted])	Participation in regular\recurring meetings Provide regular status reports on issues, risks, progress and financials Technical consultancy
Integration Specialist ([redacted])	Participation in regular\recurring meetings Technical consultancy

2. Scope of Work

2.1. Information and Activities In-Scope

ACT Health expects the following outcomes during and at the end of this engagement. The deliverables to enable these outcomes are specified in Section 4.2.

These requests preserve Siemens Intellectual Property, and do not range beyond the boundaries of the contract between ACT Health and Siemens.

ACT Health require the ability for a resource to be available onsite as required, at Canberra Hospital, for the duration of the SoW. It is anticipated that the majority of this work can be completed remotely.

Transition-Out Activities In-Scope
Support of Transition-Out Discovery
Consulting Services and information transfer in support of a knowledge gathering activity that supports the database source to target mapping stage of the IDIS data migration work stream between the Siemens PACS database and the Staging/Cache environment. Provision of technical specifications and support for the connection of the Agfa AHEI system to the Siemens PACS image store for the purpose of migrating legacy DICOM images.
Support of Transition-Out Knowledge Transfer
Consulting Services and information transfer in support of the ACT Health data migration Data Analyst in assessing and rectifying data quality problems and or support workarounds in place to offset them.

2.2. Activities and Information Not In-Scope

The following information and activities are considered out of scope for Siemens, by ACT Health, for this SoW.

Transition-Out Activities and Documents Not In-Scope	
Participation in system decommissioning activities. Involvement in system retirement/sanitation, data archival and software/infrastructure decommissioning.	Siemens is not required to provide assistance to ACT Health with system decommissioning. System Retirement, Software/Infrastructure repurposing and decommissioning will be managed by ACT Health, Shared Services ICT.
Execution of any data transformation during the extract process.	ACT Health will be responsible for any transformation of data prior to loading into the Agfa system
Direct supply of Consulting Services to vendors or external third parties retained by ACT Health.	ACT Health manages the relationship between the IDIS Project and its various providers. ACT Health does not require direct interaction between Siemens and other ACT Health contracted parties.
Siemens is not required to manage, execute or support data migration from the Staging/Cache environment into the Agfa PACS database.	This aspect of data migration will be managed directly by the IDIS Project Team (ACT Health) and designed/executed jointly by ACT Health and [redacted]
Siemens is not required to provide data log files under this SoW.	Should this degree of detail be needed by ACT Health, it will be requested from the DBA support team which operationally manages the existing RIS-PACS databases.
Documentation of any ACT Health specific database tables that fall outside the Siemens standard RIS database schema.	Siemens to provide the standard PACS database schema.
Any works associated with data migration from the Siemens RIS database.	This will be detailed in a separate SoW.

System performance during PACS data migration activities in production	Siemens is not responsible for any performance issues experienced by end users whilst Agfa is executing the PACS data migration activity.
Speed of data migration	Siemens is not responsible for any concerns relating to the speed at which the data migration activity is progressing. This is the responsibility of Agfa.

2.3. Services Timetable

The current Schedule for Data Migration is as follows:

Milestone	Timeframe	Comments
Agfa Dev environment ready with base data loaded.	23 Nov 2017	Required for initial data migration load testing
Data Migration ready for full RIS load Test.	19 Jan 2018	Requires Test environment, plus base data
Begin Test PACS load	1 Feb 2018	Requires successful RIS load
Testing complete	26 Feb 2018	
Begin **Production** RIS load	1 March 2018	Requires ability to keep in step with ongoing Siemens RIS, either via final delta load prior to go-live or live messaging.
Begin **Production** PACS metadata load and image transfer	26 March 2018	Based on 25 days for RIS load.

2.4. Success Criteria

The following are essential criteria for the success of this SoW:

- Delivery of production data from the Siemens PACS database in the form specified by ACT Health.
- Provision of audited counts for all extracts against source data.
- Provision of exception files documenting all records that cannot be migrated, with rationale for rejection.
- Delivery and activities occur to budget and schedule.

3. General Requirements

3.1. Deliverables

The following Documentation and Activities are deliverables of this SoW, and support the Scope of Work set out above.

For deliverables, which are timed for start/finish in line with the ACT Health project schedule, please refer to IDIS Master Project Schedule for specific dates or as per agreed activities and timeframes by both parties.

Item #	Deliverable Description	Expected Start	Expected Finish
1.0	Provision of Consulting Services to ACT Health including the delivery of: • Standard PACS data dictionary , including Database Conceptual and Physical Models (ERM or equivalent); • Database Metadata Directory and/or Reference Table Specification; This knowledge gathering activity supports the database source to target mapping stage of the IDIS data transformation/migration work stream;	SoW signing	Delivery of final extracts for Production
2.0	Gap Analysis documenting all clinically relevant database fields that have not been mapped to an equivalent field in the Agfa migration file specification.	With first set of extraction files	Delivery of final extracts for Production
3.0	Data Mapping documentation, including: • Destination - Reference to Agfa file specification(i.e. file/field) • Source - Siemens database reference where data was extracted from. • Any rules or modifications used to massage source data before being placed in the Agfa spreadsheet, including documented workarounds for known data quality/integrity problems. • Counts of all records extracted to aid in post-migration data audits	With first set of extraction files	Delivery of final extracts for Production
4.0	Data Migration extracts populating templates in the format specified by [redacted] including: • Study file • Series file • Instance file • Procedure Information file (optional) It is expected that there will be a minimum of two preliminary extracts as part of testing the agreed data migration process, one full extract for loading into the Production AHEI environment, plus one production delta extract.	TBC	Delivery of final extracts for Production
5.0	Up to five copies of the production PACS database, scheduled as required, to refresh the ACT Health Data Migration Test environment.	Acceptance of SoW	When delivery completed
6.0	Participation in regular meetings with the ACT Health IDIS Project team per the agreed schedule. This will ensure that each party has full understanding of current progress and issues. *Anticipated to be weekly until end November 2017. Post November 2017 then fortnightly.	Aligned to schedule	Aligned to schedule

3.2. Reporting

ACT Health require Siemens to provide fortnightly status reports against the set deliverables, including risks, issues and financials to the ACT Health Project Director.

3.3. Assumptions and Constraints

The following assumptions have been made in relation to this SoW:

- The ACT Health IDIS Data Migration team will have timely access to Siemens resources to assist with the validation and cleansing of PACS data prior to migration.
- The Siemens resources allocated to this project have the requisite level of knowledge to actively support ACT Health staff.
- The Agfa Development, Test and Production environments have been built and available to use during development and testing of the Data Migration extracts.
- All clinically relevant data in the Siemens PACS database can be either successfully migrated or archived so that it can be available for query and reporting as needed.

The following constraints exist in relation to this SoW:

- The quality of the data and images migrated to Agfa ultimately depends on the quality of the data extracted from the Siemens PACS. All efforts will be made to ensure data quality.
- All scheduled milestones depend upon the successful delivery of relevant environments.

4. Financial

Siemens has provided a fixed price to deliver the works outlined in this document. The normal rate as per the contract is currently [redacted] per day. For a fixed price agreement, Siemens has offered a [redacted] discount ([redacted] per day). The payment milestones associated with this agreement are as follows:

Item #	Resource/Role Description/Expenses	Date Required	% Total Cost	Unit Cost (ex. GST)
1.0	Test Data Migration Extract Sign-off: • Study file • Series file • Instance file • Procedure Information file (optional) Delivery of Gap Analysis documentation		50%	[redacted]
2.0	Final Production Data Migration Extract Sign-off: • Study file • Series file • Instance file • Procedure Information file (optional)		50%	[redacted]
Total Cost (ex GST):				**$53,551.00**

Rates quoted shall be drawn from the ACT Health RIS-PACS Implementation Support and Maintenance Agreement, Section 5.7.3 Professional Rates for Additional Services.

Travel to be arranged by Siemens, at cost with receipts to be provided ACTH (Travel and accommodation costs are to be at non-Senior Executive Service (SES) equivalent entitlements.

No variation from the rates supplied in The Agreement will be accepted by ACT Health, unless reduced pricing is offered by Siemens.

5. Appendices

Work Order

Applicable Documents

Glossary

Heland, Rebecca (Health)

From: [redacted] (Health)
Sent: Tuesday, 21 November 2017 12:57 PM
To: [redacted] (Health); [redacted]
Cc: [redacted] Crossley, Nick; [redacted] (Health)
Subject: RE: PACS DB Test Extract [SEC=UNCLASSIFIED]

Hi [redacted]
There are just a few more that I would like to add to the feedback from [redacted]

Doctors:
The address details for the doctor needs to be mapped as work address, the extract maps them as home address details.
Also Work Phone Number and Work Fax Number needs to be extracted.

Patients:
SSN – leave this out from the extract as this information has not been recorded consistently for all the patients in the system.
Home address number to be left blank and Home Address Street be mapped to addr1 + addr2 (its not easy to strip out the number from the street, so leave it blank and populate the concatenated addr into AddressStreet)
Most of the work phone number seems to be the patient's mobile number, can we map that to the patient's mobile number instead of the work number

Service Requests:
FillerOrderNumber mapped as acc_itn + ord_no + seq_no, is this the same combination used as FillerOrderNumber in PACS as well?

Requested Procedures:
StudyUIDs have been tab separated where accession number mapped to more than one studies, we would like them to be extracted as separate rows with the acc no suffixed with a seq no to make the accession numbers unique
Many missing studies, we have been told this can be extracted from PACS, but how and when will this be provided?
Performing physician details?

Results:
Missing result details for some accession numbers, we have been told that the results are kept in an encrypted table, has it not been extracted from this source, is that why result details are missing for some acc nos?

General Notes:
The headers for the extract files need to be an exact match to AGFA's specifications.
Example:
PatientID|IssuerofPatientID | LastName | FirstName| MiddleName | DateofBirth | Sex | SSN | HomeAddressStreet | HomeAddressNumber | HomeAddressCity | HomeAddressState | HomeAddressZipCode | HomeAddressCountry | HomePhonenumber | WorkPhonenumber | Homeemail
Needs to be corrected as
PatientId|IssuerOfPatientId|LastName|FirstName|MiddleName|DateOfBirth|Sex|Ssn|HomeAddressStreet|HomeAddressNumber|HomeAddressCity|HomeAddressState|HomeAddressZipCode|HomeAddressCountry|HomePhoneNumber|WorkPhoneNumber|HomeEmail(No spaces before or after the column names)

Let me know if you need further details.

Thanks,
[redacted]

[redacted] | IDIS Data Migration Analyst - UCPH Digital Solutions Program
Mobile : [redacted] | Email: [redacted]@act.gov.au

From: [redacted] (Health)
Sent: Monday, 20 November 2017 4:03 PM
To: [redacted] <[redacted]>
Cc: [redacted] <[redacted]> (Health)
<[redacted]act.gov.au>; Crossley, Nick <Nick.Crossley@act.gov.au>; [redacted] (Health)
<[redacted]act.gov.au>
Subject: RE: PACS DB Test Extract [SEC=UNCLASSIFIED]

[redacted]

Thanks for the RIS extracts on Friday. We have the following feedback:

Doctors:

- Appears OK apart from the inclusion of the SyngoDrNumber and Issuer columns. These are not required by Agfa and should be removed.

Patients

- For Country fields, where no value is present, please use 'UNK' rather than 'Not Specified'. This will mean that we do not have to perform that transform on the data before we pass it to Agfa. Otherwise no obvious issues.

Service Requests

- One very small point first. Column header for Patient is 'PAtientID'. Case probably doesn't matter but we might as well match Agfa's spec.
- Requesting Physician must be the ID of a doctor in the Doctor extract. Currently it contains an Id and name concatenated, which do not seem to match the doctor file either. If this field in the Siemens system is not linked to the doctors table then it should be left blank.
- Requesting Department and Hospital columns are out of alignment; there appears to be one too many delimiters. Additionally, the 'Issuer' of the department and Hospital Ids must be 'SYSTEM'.
- The OrderPriority column is mandatory. Please insert 'ROUTINE' if there is no value in the database.
- The order creation column header is incorrect; it must be 'OrderCreationDateTime'. It is also mandatory.

Requested Procedures

- Same small issue with PAtientID header.
- Some column headers are incorrect; I have marked them up in the attached file.
- Use 'SYSTEM' for IssuerofPerformingDepartmentId, not 'PAS'. This should only have a value if the associated 'id' field is present.

Results

- This file is not '|' delimited – still uses the \F\ escape sequence.
- 'Body' column header incorrect – 'reporttext'.
- Many columns out of sequence – Transcriptionist and author. Also set all 'issuer' columns for these columns to 'SYSTEM' only where the corresponding id field has a value.

I have attached a spreadsheet with the last set of extracts loaded and annotated according to the above. I have also included the Agfa specification again to assist with checking column headers, mandatory fields, etc. If you can also get the data mappings with the next update we would appreciate it.

We will also need the RIS and PACS test extracts to be co-ordinated; i.e. the PACS study information should be extracted based on the patients and accession numbers that have been included in the RIS extract. Without that we have no way of properly checking the migration across the whole system.

If [redacted] discovers anything further in her cross-checks she will send them on also.

Thanks
[redacted]

[redacted] | IDIS Delivery Manager - UCPH Digital Solutions Program
Phone: |Mobile: [redacted] | Email: [redacted]
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From: [redacted] [mailto[redacted]
Sent: Wednesday, 15 November 2017 1:03 PM
To: [redacted] (Health) <[redacted]
Cc: [redacted] <[redacted] (Health)
<[redacted]act.gov.au>; Crossley, Nick <Nick.Crossley@act.gov.au>; [redacted] (Health)
<[redacted]act.gov.au>
Subject: RE: PACS DB Test Extract [SEC=UNCLASSIFIED]

Hi [redacted]

Yes I have already. I am expecting the extracts for RIS tomorrow, hoping the documentation follows.

est regards
[redacted]

From: [redacted] (Health) [mailto[redacted]
Sent: Wednesday, 15 November 2017 12:32 PM
To: [redacted] (HC APC AUS SV-CS OP)
Cc: [redacted] (Health); Crossley, Nick; [redacted] (Health)
Subject: RE: PACS DB Test Extract [SEC=UNCLASSIFIED]

Thanks [redacted]

We'll check the extract folder for the additional files. Thanks for the PACS mappings; can you also arrange for the same for the RIS files mappings – we have not received a draft of those yet.

Regards
[redacted]

[redacted]
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From: [redacted] [mailto[redacted]
Sent: Wednesday, 15 November 2017 9:17 AM
To: [redacted] (Health) <[redacted]
Cc: [redacted] <[redacted] (Health)
<[redacted]act.gov.au>; Crossley, Nick <Nick.Crossley@act.gov.au>; [redacted] (Health)
<[redacted]
Subject: RE: PACS DB Test Extract [SEC=UNCLASSIFIED]

Hi [redacted]

I received this spreadsheet overnight which shows the source fields for the mappings.

My colleagues were having trouble getting a good connection overnight so I am not sure if they were able to complete the extractions.

Perhaps you could check the same folder as yesterday to see if he updated the files:
You can find the test DB extract on the esyngo Imaging OPM2 192.168.98.15 in the folder
D:\Siemens\PACSExtract\TestExtract

If you have any further queries re this extract and mappings, you can raise these during the call at 5:30pm.

Best regards
[redacted]

From: [redacted] (Health) [mailto[redacted]
Sent: Tuesday, 14 November 2017 3:16 PM
To: [redacted] (HC APC AUS SV-CS OP)
Cc: [redacted]); Crossley, Nick; [redacted] (Health)
Subject: RE: PACS DB Test Extract [SEC=UNCLASSIFIED]

[redacted]

Yes, Procedure was also missing – this is an optional file but a sample would be useful to identify what data can be brought across.

Also, we have done a quick analysis of the first test files and it appears that the techs have ignored the specifications we sent. Most of the field headers do not match the required field names, plus a number of the mandatory fields are missing. Can you please request them to create files that match the Agfa requirements – I have included a copy of the specs I previously sent to assist as well as the files loaded into Excel for comparison.

Regards
[redacted]

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From: [redacted] [mailto[redacted]
Sent: Tuesday, 14 November 2017 11:47 AM
To: [redacted] (Health) <[redacted]
Cc: [redacted] <[redacted] (Health)
<[redacted]act.gov.au>; Crossley, Nick <Nick.Crossley@act.gov.au>; [redacted] (Health)
<[redacted]@act.gov.au>
Subject: RE: PACS DB Test Extract [SEC=UNCLASSIFIED]

Hi [redacted]

Looks like procedure was also missing?

Let me follow-up.

Best regards
[redacted]

From: [redacted] (Health) [mailto[redacted]
Sent: Tuesday, 14 November 2017 11:03 AM
To: [redacted] (HC APC AUS SV-CS OP)
Cc: [redacted]); Crossley, Nick; [redacted] (Health)
Subject: RE: PACS DB Test Extract [SEC=UNCLASSIFIED]

[redacted]

Will there be an Instance file extract coming? That is the third file that Agfa's documentation requires (see attached requirements), and I believe relates fairly closely to the Siemens PDCOMOBJECT table.

[redacted]

[redacted] | **IDIS Delivery Manager - UCPH Digital Solutions Program**
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From: Crossley, Nick
Sent: Tuesday, 14 November 2017 8:38 AM
To: [redacted] (Health) <[redacted] (Health) <[redacted]act.gov.au>
Cc: [redacted] <[redacted]
Subject: RE: PACS DB Test Extract [SEC=UNCLASSIFIED]

Thanks [redacted]
I will get the PACS admin to assist, he is on a 10am start today

Regards

Nick Crossley
Project Manager MAIPM, CPPM |Shared Services ICT Health
Phone: +61 2 6207 8919 |Mob [redacted]
Shared Services| Chief Minister, Treasury and Economic Development Directorate | **ACT Government**
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From: [redacted] [mailto:[redacted]
Sent: Tuesday, 14 November 2017 8:10 AM
To: Crossley, Nick <Nick.Crossley@act.gov.au>; [redacted] (Health) <[redacted] (Health) <[redacted]act.gov.au>
Cc: [redacted] <[redacted]
Subject: PACS DB Test Extract

Hi All

I received confirmation of the PACS DB Test extract overnight.

You can find the files on esyngo Imaging OPM2 192.168.98.15 in the folder:
D:\Siemens\PACSExtract\TestExtract
Study Extract: PACS_DB_TestExtract_Study_20171113.txt
Series Extract: PACS_DB_TestExtract_Series_20171113.txt

I assume you can access this but please let me know if this is not the case and I will get someone to send through to you.

Best regards

[redacted]

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Heland, Rebecca (Health)

From: [redacted] (Health)
Sent: Friday, 17 November 2017 10:24 AM
To: Crossley, Nick; [redacted] (Health)
Cc: Carroll, Kristina; Norman, Karen (Health)
Subject: RE: PACS SQL Converted DB [SEC=UNCLASSIFIED]

Agreed, and I have raised this before?

If you want this discussed and agreed upon at the next PCWG, then I need a paper today. As the PCWG is on Wednesday.

[redacted] Is this something that can be done?

[redacted]

[redacted] | **Project Director - Integrated Diagnostic Imaging Solution Project**
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From: Crossley, Nick
Sent: Friday, 17 November 2017 10:20 AM
To: [redacted] (Health) <[redacted]act.gov.au>
Cc: Carroll, Kristina <Kristina.Carroll@act.gov.au>; [redacted] (Health) <[redacted]
Subject: RE: PACS SQL Converted DB [SEC=UNCLASSIFIED]

Hi [redacted]
This is potentially risky, who is expected to do this conversion? I did the sample one on my own laptop, but not sure if I should be doing any further.

If something was to go wrong with the conversion (as patient data) I wouldn't be comfortable in being responsible.

Where is this application to be installed? This may need further discussion, and possibly through PCWG or with the CIO.
Happy to discuss further.

Regards

Nick Crossley
Project Manager MAIPM, CPPM |Shared Services ICT Health
Phone: +61 2 6207 8919 |Mob [redacted]
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From: [redacted] (Health)
Sent: Thursday, 16 November 2017 3:32 PM
To: [redacted] (Health) <[redacted]act.gov.au>
Cc: Crossley, Nick <Nick.Crossley@act.gov.au>; [redacted] (Health) <[redacted]act.gov.au>
Subject: FW: PACS SQL Converted DB [SEC=UNCLASSIFIED]

[redacted]