ACT Government | ACT Health

FOI19-16

[redacted]

Dear [redacted]

Freedom of Information Request: FOI19/16

I refer to your application under section 30 of the *Freedom of Information Act 2016* (the Act), transferred to ACT Health on 28 March 2019 in which you sought:

> *"I would like documents related to medical imaging records being transferred from a Siemens to an AGFA system in 2017 and 2018:*
> *Documents dating from 1 January 2016 to 31 December 2018 related to the tender for an IT system for medical imaging records in the Canberra Hospital,*
> *Correspondence between Canberra Health Services, ACT Health, Siemens and AGFA regarding the transition of medical imaging records from a Siemens system to an AGFA system in 2017 and 2018.*
> *Reports prepared by consultants, Siemens, AGFA, or ACT Health staff about the transition process from the Siemens system to AGFA during 2017 and 2018 and related correspondence."*

I am an Information Officer appointed by the Director-General of ACT Health under section 18 of the Act to deal with access applications made under Part 5 of the Act.

ACT Health Directorate was required to provide a decision on your access application by 24 May 2019 following an extension by agreement. This application was partially transferred to Chief Minister, Treasury and Economic Development Directorate (CMTEDD). CMTEDD will provide a separate decision regarding the documents held by their directorate.

Decision on access

Searches were completed for relevant documents and 2246 pages of documentation were identified that fall within the scope of your request.

I have included as Attachment A to this decision the schedule of relevant documents. This provides a description of documents and the access decision for each of those document types.

I have decided to defer access to some information, Reference Numbers 12, 23, 25, 28, 48, 50, 58, 60, 64 and 74, as affected third parties have objected to the disclosure. The third parties may apply for review of my release decision within 20 working days after my decision is published in the ACT Health's disclosure log, or a longer period allowed by the Ombudsman. I will write to you to advise when access is no longer deferred in accordance with Section 38(6)(b) of the Act.

I have decided to grant partial access to the majority of listed document classes. I have decided to grant access, under section 50 of the Act, to copies of documents with deletions applied to information that I consider would be contrary to the public interest to disclose. The information redacted relates to personal information such as mobile phone numbers and contact detail of non-Government third party providers. I have also made a decision to redact some commercial in confidence information of third parties.

Public Interest Factors Favouring Disclosure

I have identified that there are no factors favouring disclosure of this information under Schedule 2, section 2.1.

Public Interest Factors Favouring Non-Disclosure

The following factors were considered relevant in favour of the non-disclosure of the documents:

- Schedule 2.2(a)(ii) - prejudice the protection of an individual's right to privacy or any other right under the Human Rights ACT 2004.
- Schedule 2.2 (a) (xi) -Prejudice the business affairs of an agency or person.

On balance, the information identified is contrary to the public interest and I have decided not to disclose this information.

My access decisions are detailed further in the attached schedule and the documents released to you are provided as Attachment B to this letter.

In reaching my access decision, I have taken the following into account:

- The FOI Act
- The contents of the documents that fall within the scope of your request;
- The views of relevant third parties; and
- The Human Rights Act 2004

Charges

Processing charges are not applicable to this request.

Online publishing – disclosure log

Under section 28 of the Act, ACT Health maintains an online record of access applications called a disclosure log. Your original access application, my decision and

documents released to you in response to your access application will be published in the ACT Health disclosure log not less than three days but not more than 10 days after the date of this decision. Your personal contact details will not be published.

Ombudsman review

My decision on your access request is a reviewable decision as identified in Schedule 3 of the Act. You have the right to seek Ombudsman review of this outcome under section 73 of the Act within 20 working days from the day that my decision is published in ACT Health's disclosure log, or a longer period allowed by the Ombudsman.

If you wish to request a review of my decision you may write to the Ombudsman at:

The ACT Ombudsman
GPO Box 442
CANBERRA ACT 2601
Via email: ACTFOI@ombudsman.gov.au.

ACT Civil and Administrative Tribunal (ACAT) review

Under section 84 of the Act, if a decision is made under section 82(1) on an Ombudsman review, you may apply to the ACAT for review of the Ombudsman decision.

Further information may be obtained from the ACAT at:

ACT Civil and Administrative Tribunal
Level 4, 1 Moore St
GPO Box 370
Canberra City ACT 2601
Telephone: (02) 6207 1740
http://www.acat.act.gov.au/

If you have any queries concerning ACT Health Directorate's processing of your request, or would like further information, please contact the FOI Coordinator on (02) 5124 9829 or email HealthFOI@act.gov.au.

Yours sincerely

Peter O'Halloran
Chief Information Officer

24 May 2019

ACT Government | ACT Health

FREEDOM OF INFORMATION REQUEST SCHEDULE

Please be aware that under the *Freedom of Information Act 2016*, some of the information provided to you will be released to the public through the ACT Government's Open Access Scheme. The Open Access release status column of the table below indicates what documents are intended for release online through open access.

Personal information or business affairs information will not be made available under this policy. If you think the content of your request would contain such information, please inform the contact officer immediately.

Information about what is published on open access is available online at: http://www.health.act.gov.au/public-information/consumers/freedom-information

NAME	WHAT ARE THE PARAMETERS OF THE REQUEST	File No
[redacted]	**I would like documents related to medical imaging records being transferred from a Siemens to an AGFA system in 2017 and 2018:** **Documents dating from 1 January 2016 to 31 December 2018 related to the tender for an IT system for medical imaging records in the Canberra Hospital,** **Correspondence between Canberra Health Services, ACT Health, Siemens and AGFA regarding the transition of medical imaging records from a Siemens system to an AGFA system in 2017 and 2018.** **Reports prepared by consultants, Siemens, AGFA, or ACT Health staff about the transition process from the Siemens system to AGFA during 2017 and 2018 and related correspondence.**	**FOI19/16**

Ref No	No of Folios	Description	Date	Status	Reason for non-release or deferral	Open Access release status
1.	1 - 15	Patient Name Analysis	Undated	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
2.	16 - 19	Populate Data	Undated	Full		Yes
3.	20 - 30	Integrated Diagnostic Imaging Solution – Data Migration Process	Undated	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
4.	31 – 38	UCPH Digital Solutions Program – Integrated Diagnostic Imaging Solution (IDIS) – Data Extraction Specification	Undated	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
5.	39 – 47	Insurance Analysis	17 July 2019	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
6.	48 - 57	Migration Process	Undated	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
7.	58 - 63	RIS	Undated	Full		Yes
8.	64 - 90	Emails	December 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
9.	91 - 99	Emails	November 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
10.	100 – 105	Project Control Working Group Meeting Minutes	27 Nov 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
11.	106 - 114	Emails	November 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
12.	115 - 121	Emails	November 2018	Deferred		No

13.	122 - 139	Emails	November 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
14.	140 - 142	Executive Management Meeting Minutes	30 Oct 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
15.	143 – 308	Emails	October 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
16.	309 - 342	UCPH Digital Solutions Program – Integrated Diagnostic Imaging Solution (IDIS) – Data Migration Specification	September 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
17.	343 - 350	UCPH Digital Solutions Program – Integrated Diagnostic Imaging Solution (IDIS) – Data Extraction Specification	September 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
18.	351 - 352	RISPACS Data Migration Overview v0.1	Undated	Full		Yes
19.	353 - 371	Emails	September 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
20.	372 - 383	Integrated Diagnostic Imaging Solution (IDIS) Project – Agenda and papers	18 Sep 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
21.	384 - 422	Emails	September 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
22.	423 - 426	Emails	August 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
23.	427 - 432	Emails	August 2018	Deferred		No
24.	433 - 434	Emails	August 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes

25.	435 - 437	Emails	August 2018	Deferred		No
26.	438 - 449	Emails	August 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
27.	450 - 525	IDIS Project – Additional work order for Siemens RIS data migration for go-live – Multiple	6 August 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
28.	526 - 531	Emails	August 2018	Deferred		No
29.	530 - 531	Emails	August 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
30.	532 – 534	Emails	July 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
31.	535 – 542	Integrated Diagnostic Imaging Solution (IDIS) – Data Migration Plan	July 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
32.	543 - 734	Email and attachments	July 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy Schedule 2.2 (a) (xi) - Prejudice the business affairs of an agency or person.	Yes
33.	735 - 746	Statement of Work – Integrated Diagnostic Imaging Solution – Siemens RIS-PACS Solution RIS Transition-Out	June 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
34.	747 – 752	Emails	June 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes

35.	753 – 758	IDIS Project Control Working Group Minutes	26 June 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
36.	759 - 903	Emails	June 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
37.	904 – 918	IDIS Project Control Working Group Minutes and papers	26 June 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
38.	919 - 930	Emails	June 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
39.	931 - 934	IDIS Project Control Working Group Minutes	29 May 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
40.	935 – 945	Emails	May 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
41.	946 - 999	Emails	April 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
42.	1000 - 1106	Emails	March 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
43.	1107 - 1207	Emails	February 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
44.	1208 - 1214	Executive Management Meeting Minutes	11 Dec 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes

45.	1215 - 1228	Emails	February 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
46.	1229 - 1232	IDID Executive Management Meeting Minutes	13 Feb 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
47.	1233 - 1234	Emails	February 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
48.	1235 - 1269	Emails	February 2018	Deferred		No
49.	1270 - 1316	Emails	February 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
50.	1317 - 1344	Emails	February 2018	Deferred		No
51.	1345 - 1350	Emails	February 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
52.	1351 - 1378	Emails	January 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
53.	1379 - 1383	AGFA Healthcare – Data Migration Approach	Undated	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
54.	1384 - 1398	Schedule 5 – Work order – Integration & Data Migration Analysis IDIS Project	13 July 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy Schedule 2.2 (a) (xi) - Prejudice the business affairs of an agency or person.	Yes

55.	1399 - 1411	IDIS – Data Migration Process	January 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
56.	1412	ACT Health and AGFA Teleconference	18 Oct 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
57.	1413 - 1469	Emails	January 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
58.	1470 - 1498	Emails	January 2018	Deferred		No
59.	1499 - 1591	Emails	January 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
60.	1592 - 1615	Emails	January 2018	Deferred		No
61.	1616 - 1671	Emails	January 2018	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
62.	1672 - 1678	Register of Purchasing Decision	22 Dec 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
63.	1679 - 1867	Emails	December 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
64.	1868 - 1873	Emails	December 2017	Deferred		No
65.	1874 - 1958	Emails	December 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes

66.	1959 - 1982	Emails	November 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
67.	1983 - 1992	Patient Allergy Analysis	17 July 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
68.	1993 - 2006	Patient Ins Visits Analysis	17 July 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
69.	2007 - 2018	Patient User Fields Analysis	17 July 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
70.	2019 - 2043	Patient Analysis	17 July 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
71.	2044 - 2067	Emails and attachments – Siemens PACS Data Migration	22 Dec 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
72.	2068 - 2077	Statement of Work – Integrated Diagnostic Imaging Solution – Siemens RIS-PACS Solution PACS Transition-Out	November 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
73.	2078 - 2086	Emails and attachments	November 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
74.	2087 - 2089	Emails and attachments	November 2017	Deferred		No
75.	2090 - 2149	Emails and attachments	November 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
76.	2150 - 2165	IDIS Executive Management Meeting Minutes and papers	7 Nov 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
77.	2166 - 2178	IDIS Project Control Working Group Minutes and papers	3 Nov 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes

78.	2179 - 2203	Emails and attachments	November 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
79.	2204 - 2210	Emails	October 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
80.	2211	Email	May 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
81.	2212 - 2213	Email	Sept 2016	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
82.	2214 - 2246	Additional correspondence	September 2017	Partial	Schedule 2.2 (a) (ii) - Individual right to privacy	Yes
Total No of Docs						
82						

PtntName Analysis

Purpose

This document summarises the findings of analysing data from the current RIS pat_name 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\pat_name\pat_name 20170717.

Overview

The fields in this table do not appear to have no dependences on:

- On any other fields within the table; nor
- On any other tables within the application.

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

Detail & Action Items

The 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.

Field 1: pat_itn

This field is the primary key for the table.

Spreadsheet PtntName_0010_DupPK.xlsx lists duplicate values in this field. The table is empty therefore the field appears to be acceptable.

Field 2: last_sndx

This is a Soundex field and so is not tested.

Field 3: first_sndx

This is a Soundex field and so is not tested.

Field 4: pt_sex

Spreadsheet PtntName_0040_Sex.xlsx identifies unique values and counts records. Some values are obviously correct whereas others appear to be undefined values. Migration might require that these values be defined and/or corrected. Agreed. Will need to determine acceptable value set (ACTPAS, business and Agfa) and cleansing rules. Note also that HL7 also defines a value set for the sex field.

Action Item 1. For field pt_sex and based on spreadsheet PtntName_0040_Sex.xlsx and any other relevant source of information:

PtntName Analysis

a. The RISPACS team will provide a list of acceptable values and meanings for each; and

b. Where any of the records in the table contain values not on the list of acceptable values the RISPACS team will provide a list or algorithm adequate for identifying those values and the action to be taken to correct that situation.

Field 5: pt_birth_dtime

Spreadsheet PtntName_0050_DoB.xlsx identifies unique values of DoB by YYYYMM and counts records, with values inserted for calendar months containing no records to facilitate graphing. Areas of possible concern include clusters in January 1800 and 1850. The outlier dates are almost certainly default or rubbish dates. We will need a business decision here; possibly fixing via ACTPAS but only where data available. If a problem relates to old (inactive patient) information, could decide to leave as is.

Action Item 2. For field pt_birth_dtime and based on spreadsheet PtntName_0050_DoB.xlsx and any other relevant source of information:

a. The RISPACS team provide will provide a list of acceptable values.

Field 6: pt_last

Spreadsheet PtntName_0060_LName.xlsx identifies unique values and counts records for analysis by the business.

Spreadsheet PtntName_0061_LName.xlsx identifies values containing non-alpha (i.e. !@#$%^&*()_+={}:;<>,.?/[]) and/or numeric characters – values that don't normally appear in such a field, as well as leading spaces. The presence is indicated by the value -1 in the relevant column of the spreadsheet. In general we would expect that fixing typos in names etc. would be done over time in ACTPAS and then trickle down via messaging. Obvious problems could be expedited by notifying relevant support group and request that they be fixed. Same for first and middle name fields. Handling of other 'special' cases will need to be decided.

Action Item 3. For field pt_last and based on spreadsheets PtntName_0060_LName.xlsx and PtntName_0061_LName and any other relevant source of information:

a. The RISPACS team will provide a list of acceptable/unacceptable values, an algorithm that identifies acceptable/unacceptable values or a combination of both that when combined identifies acceptable/unacceptable values; and

b. Where any of the records in the table contain values not that do not satisfy the test(s) for acceptability the RISPACS team will provide a list or algorithm adequate for identifying those values and the action to be taken to correct that situation.

Field 7: pt_first

Spreadsheet PtntName_0070_FName.xlsx identifies unique values and counts records for analysis by the business.

Spreadsheet PtntName_0071_FName.xlsx identifies values containing non-alpha (i.e. !@#$%^&*()_+={}:;<>,.?/[]) and/or numeric characters – values that don't normally appear in such a field, as well as leading spaces. The presence is indicated by the value -1 in the relevant column of the spreadsheet.

Action Item 4. For field pt_first and based on spreadsheets PtntName_0070_FName.xlsx and PtntName_0071_FName and any other relevant source of information:

PtntName Analysis

a. The RISPACS team will provide a list of acceptable/unacceptable values, an algorithm that identifies acceptable/unacceptable values or a combination of both that when combined identifies acceptable/unacceptable values; and

b. Where any of the records in the table contain values not that do not satisfy the test(s) for acceptability the RISPACS team will provide a list or algorithm adequate for identifying those values and the action to be taken to correct that situation.

Field 8: pt_middle

Spreadsheet PtntName_0080_MName.xlsx identifies unique values and counts records for analysis by the business.

Spreadsheet PtntName_0081_MName.xlsx identifies values containing non-alpha (i.e. !@#$%^&*()_+={}:;<>,.?/[]) and/or numeric characters – values that don't normally appear in such a field, as well as leading spaces. The presence is indicated by the value -1 in the relevant column of the spreadsheet.

Action Item 5. For field pt_middle and based on spreadsheets PtntName_0080_MName.xlsx and PtntName_0081_MName and any other relevant source of information:

a. The RISPACS team will provide a list of acceptable/unacceptable values, an algorithm that identifies acceptable/unacceptable values or a combination of both that when combined identifies acceptable/unacceptable values; and

b. Where any of the records in the table contain values not that do not satisfy the test(s) for acceptability the RISPACS team will provide a list or algorithm adequate for identifying those values and the action to be taken to correct that situation.

Field 9: pt_title (apparently not used)

Spreadsheet PtntName_0090_Title.xlsx identifies unique values and counts records for analysis by the business. The table shows only empty records therefore it appears this field is not used.

Spreadsheet PtntName_0091_Title.xlsx identifies values containing non-alpha (i.e. !@#$%^&*()_+={}:;<>,.?/[]) and/or numeric characters – values that don't normally appear in such a field, as well as leading spaces. The presence is indicated by the value -1 in the relevant column of the spreadsheet. Given this field is apparently unused then this table is empty.

Field 10: pt_prefix

Spreadsheet PtntName_0100_Prefix.xlsx identifies unique values and counts records for analysis by the business. Visual analysis of this summary suggest there are values in the data that might benefit from the use of a look-up table and/or other form of enforcement of acceptable values. Possible issues include the interchanging of numeric zero with alphabetic "O". Ideally should be converted to a look-up table and non-conforming values cleansed. However, Agfa migration does not support this field so not to be migrated.

Spreadsheet PtntName_0101_Prefix.xlsx identifies values containing non-alpha (i.e. !@#$%^&*()_+={}:;<>,.?/[]) and/or numeric characters – values that don't normally appear in such a field, as well as leading spaces. The presence is indicated by the value -1 in the relevant column of the spreadsheet.

Action Item 6. For field pt_prefix and based on spreadsheets PtntName_0100_Prefix.xlsx and PtntName_0101_Prefix and any other relevant source of information:

a. The RISPACS team will provide a list of acceptable/unacceptable values, an algorithm that identifies acceptable/unacceptable values or a combination of both that when combined identifies acceptable/unacceptable values; and

PtntName Analysis

b. Where any of the records in the table contain values not that do not satisfy the test(s) for acceptability the RISPACS team will provide a list or algorithm adequate for identifying those values and the action to be taken to correct that situation.

Field 11: pt_suffix

Spreadsheet PtntName_0110_Suffix.xlsx identifies unique values and counts records for analysis by the business. This table has only 1 record and the content ("MS") suggests that might be an error.

Spreadsheet PtntName_0111_Suffix.xlsx identifies values containing non-alpha (i.e. !@#$%^&*()_+={}:;<>,.?/[]) and/or numeric characters – values that don't normally appear in such a field, as well as leading spaces. The presence is indicated by the value -1 in the relevant column of the spreadsheet. Given this field is essentially unused then this table is empty. Agfa migration does not support this field so not to be migrated.

Action Item 7. For field pt_suffix and based on spreadsheets PtntName_0110_Suffix.xlsx and PtntName_0111_Suffix and any other relevant source of information:

a. The RISPACS team will provide a list of acceptable/unacceptable values, an algorithm that identifies acceptable/unacceptable values or a combination of both that when combined identifies acceptable/unacceptable values; and

b. Where any of the records in the table contain values not that do not satisfy the test(s) for acceptability the RISPACS team will provide a list or algorithm adequate for identifying those values and the action to be taken to correct that situation.

PtntName Analysis

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 aPtntName.sql
        Script for analysing table [RISMigration].[dbo].[pat_name] placing the results in a series of
tables for further consideration
        Drops tables first if present
        [redacted]

        Added [Sex] extract of all [pat_itn] that are not "M" or "F" to facilitae data cleansing. [redacted]
        Modified to use RISSource tables for source data [redacted]



**/


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

/**
        Field 1 is the primary key. This part of the script checks field 1 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 PtntName_0010_DupPK. '
IF OBJECT_ID('RISMigration.dbo.PtntName_0010_DupPK', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0010_DupPK];

SELECT *  INTO [RISMigration].[dbo].[PtntName_0010_DupPK]
        FROM
                (SELECT DISTINCT [pat_itn], COUNT([pat_itn]) AS RecCount
                        FROM [RISSource].[dbo].[pat_name]
                        GROUP BY [pat_itn]) AS A
        WHERE RecCount > 1


PRINT '' PRINT '' PRINT '                                       Field 2 not tested'

/**
        Field 2 is a Soundex field (generally calculated by the application) so it is not being
checked.
**/


PRINT '' PRINT '' PRINT '                                       Field 3 not tested'

/**
        Field 3 is a Soundex field (generally calculated by the application) so it is not being
checked.
**/


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

/**
        Field 4 is the SEX field. The analysis lists values and counts for each value.
        Check the output table for unacceptable values.
**/

PRINT '' PRINT 'This test should produce about 7 records (maybe less when any errors are corrected).
Check the output for unacceptable values of SEX. Output to PtntName_0040_Sex.'
IF OBJECT_ID('RISMigration.dbo.PtntName_0040_Sex', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0040_Sex];

SELECT * INTO [RISMigration].[dbo].[PtntName_0040_Sex]
```

PtntName Analysis

```
        FROM
                (SELECT DISTINCT [pt_sex], COUNT([pt_sex]) AS RecCount
                        FROM
                                (SELECT ISNULL([pt_sex],'<NULL>') AS pt_sex
                                        FROM [RISSource].[dbo].[pat_name]) AS B
                        GROUP BY [pt_sex]) AS A
                ORDER BY [pt_sex]

/**
        Sex extract listing [pat_itn] where [pt_sex] is not "M" or "F".
**/

PRINT '' PRINT 'This test should produce about 2688 records (less when any errors are corrected).
Output to PtntName_0040_Sex_Detail.'
IF OBJECT_ID('RISMigration.dbo.PtntName_0040_Sex_Detail', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0040_Sex_Detail];

SELECT [pat_itn]
        , [pt_sex]
        INTO [RISMigration].[dbo].[PtntName_0040_Sex_Detail]
        FROM [RISSource].[dbo].[pat_name]
        WHERE [pt_sex] <> 'F' AND [pt_sex] <> 'M'
        ORDER BY [pt_sex], [pat_itn]



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

/**
        Field 5 is the DoB field. The analysis lists values by YYYYMM and counts for each value.
        Check the final output table for unacceptable values.
**/

PRINT '' PRINT 'This an intermediate process and should produce many records (initially 1629). No need
to check. Output to PtntName_0050__Wrk01. '
/**
        Field 5 part 1: Start by identifying the distinct DoB YYYYMM values and counting them.
**/
IF OBJECT_ID('RISMigration.dbo.PtntName_0050__Wrk01', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0050__Wrk01];

SELECT DISTINCT [DoBYYYYMM], COUNT([DoBYYYYMM]) AS RecCount INTO
[RISMigration].[dbo].[PtntName_0050__Wrk01]
FROM
        (SELECT CONCAT(YEAR([pt_birth_dtime]), RIGHT('00' + CAST(MONTH([pt_birth_dtime]) AS
VARCHAR(2)),2) ) AS DoBYYYYMM
                FROM [RISSource].[dbo].[pat_name]) AS A
        GROUP BY DoBYYYYMM
        ORDER BY DoBYYYYMM

PRINT '' PRINT 'This test should produce records for every month between the first and last dates. No
need to check. Output to PtntName_0050_DoB. '

/**
        Field 5 part 2: Then join to [MonthList] to fill in the months where there were no records
(facilitates charting results).
**/
IF OBJECT_ID('RISMigration.dbo.PtntName_0050_DoB', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0050_DoB];

DECLARE @minval as VARCHAR(14)
DECLARE @maxval as VARCHAR(14)

SELECT TOP 1 @minval = [DoBYYYYMM]
FROM [RISMigration].[dbo].[PtntName_0050__Wrk01]
ORDER BY [DoBYYYYMM] ASC

SELECT TOP 1 @maxval = [DoBYYYYMM]
FROM [RISMigration].[dbo].[PtntName_0050__Wrk01]
ORDER BY [DoBYYYYMM] DESC

SELECT [Year]
        , [Month]
        , [YYYYMM]
```

PtntName Analysis

```
        , ISNULL([RecCount],0) AS [RecCount]

        INTO [RISMigration].[dbo].[PtntName_0050_DoB]
FROM
        [RISMigration].[dbo].[MonthList]
        LEFT JOIN [RISMigration].[dbo].[PtntName_0050__Wrk01]
        ON DoBYYYYMM = YYYYMM
        WHERE YYYYMM >= @minval
        AND YYYYMM <= @maxval
        ORDER BY DoBYYYYMM
GO

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

/**
        Field 6 is the Last Name field. The analysis lists values and counts for each value.
        Check the output table for unacceptable values.
        Note - the SELECT DISTINCT process doesn't find NULL records normally so special attention has
been applied.
**/

PRINT '' PRINT 'This test summarises Last name and should produce a large number of records. Check the
output for unacceptable values of Last Name. Output to PtntName_0060_LName.'

/**
        Field 6 part 1: Start by summarising the Last Names values and counting them .
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0060_LName', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0060_LName];

SELECT * INTO [RISMigration].[dbo].[PtntName_0060_LName]
FROM
        (SELECT DISTINCT [pt_last], COUNT([pt_last]) AS RecCount
                FROM
                        (SELECT ISNULL([pt_last],'<NULL>') AS pt_last
                                FROM [RISSource].[dbo].[pat_name]) AS B
                GROUP BY [pt_last]) AS A
        ORDER BY [pt_last]
GO

PRINT ''PRINT 'This test looks for invalid characters in Last Name and flags them for further
processing. Output to PtntName_0061__Wrk01.'

/**
        Field 6 part 2: Now start looking for anomalies and report them.
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0061__Wrk01', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0061__Wrk01];

SELECT [pt_last]
        , [RecCount]
        , CAST (CASE WHEN [pt_last] LIKE ' %' THEN 1 ELSE 0 END AS BIT) AS [LeadingSpace]
        , CAST (CASE WHEN [pt_last] LIKE '%[0-9]%' THEN 1 ELSE 0 END AS BIT) AS [NumericVal]
        , CAST (CASE WHEN [pt_last] LIKE '%[!@#$%^&*()_+={}:;<>,.?/]%'
                                        OR [pt_last] LIKE '%[[]%'
                                        OR [pt_last] LIKE '%]%' THEN 1 ELSE 0 END AS BIT) AS
[SymbolVal]

        INTO [RISMigration].[dbo].[PtntName_0061__Wrk01]
        FROM [RISMigration].[dbo].[PtntName_0060_LName]
        ORDER BY [pt_last]
GO

PRINT ''PRINT 'This test takes the content of PtntName_0061__Wrk01 and reports the records with
apparent anomalies. Output to PtntName_0061_Lname.'

/**
        Field 6 part 3: Now start reporting the anomalies.
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0061_Lname', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0061_LName];
```

PtntName Analysis

```
SELECT *
        INTO [RISMigration].[dbo].[PtntName_0061_LName]
        FROM [RISMigration].[dbo].[PtntName_0061__Wrk01]
        WHERE [LeadingSpace] = 1
                OR [NumericVal] = 1
                OR [SymbolVal] = 1
        ORDER BY [pt_last]
GO

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

/**
        Field 7 is the First Name field. The analysis lists values and counts for each value.
        Check the output table for unacceptable values.
        Note - the SELECT DISTINCT process doesn't find NULL records normally so special attention has
been applied.
**/

PRINT '' PRINT 'This test summarises Last name and should produce a large number of records. Check the
output for unacceptable values of Last Name. Output to PtntName_0070_FName.'

/**
        Field 7 part 1: Start by summarising the Last Names values and counting them .
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0070_FName', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0070_FName];

SELECT * INTO [RISMigration].[dbo].[PtntName_0070_FName]
FROM
        (SELECT DISTINCT [pt_first], COUNT([pt_first]) AS RecCount
                FROM
                        (SELECT ISNULL([pt_first],'<NULL>') AS pt_first
                                FROM [RISSource].[dbo].[pat_name]) AS B
                GROUP BY [pt_first]) AS A
        ORDER BY [pt_first]
GO

PRINT ''PRINT 'This test looks for invalid characters in First Name and flags them for further
processing. Output to PtntName_0071__Wrk01.'

/**
        Field 7 part 2: Now start looking for anomalies and report them.
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0071__Wrk01', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0071__Wrk01];

SELECT [pt_first]
        , [RecCount]
        , CAST (CASE WHEN [pt_first] LIKE ' %' THEN 1 ELSE 0 END AS BIT) AS [LeadingSpace]
        , CAST (CASE WHEN [pt_first] LIKE '%[0-9]%' THEN 1 ELSE 0 END AS BIT) AS [NumericVal]
        , CAST (CASE WHEN [pt_first] LIKE '%[!@#$%^&*()_+={}:;<>,.?/]%'
                                        OR [pt_first] LIKE '%[[]%'
                                        OR [pt_first] LIKE '%]%' THEN 1 ELSE 0 END AS BIT) AS
[SymbolVal]

        INTO [RISMigration].[dbo].[PtntName_0071__Wrk01]
        FROM [RISMigration].[dbo].[PtntName_0070_FName]
        ORDER BY [pt_first]
GO

PRINT ''PRINT 'This test takes the content of PtntName_0071__Wrk01 and reports the records with
apparent anomalies. Output to PtntName_0071_FName.'

/**
        Field 7 part 3: Now start reporting the anomalies.
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0071_FName', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0071_FName];

SELECT *
```

PtntName Analysis

```
        INTO [RISMigration].[dbo].[PtntName_0071_FName]
        FROM [RISMigration].[dbo].[PtntName_0071__Wrk01]
        WHERE [LeadingSpace] = 1
                OR [NumericVal] = 1
                OR [SymbolVal] = 1
        ORDER BY [pt_first]
GO

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

/**
        Field 8 is the Middle Name field. The analysis lists values and counts for each value.
        Check the output table for unacceptable values.
        Note - the SELECT DISTINCT process doesn't find NULL records normally so special attention has
been applied.
**/

PRINT '' PRINT 'This test summarises Middle Name and should produce a large number of records. Check
the output for unacceptable values of Last Name. Output to PtntName_0080_MName.'

/**
        Field 8 part 1: Start by summarising the Last Names values and counting them .
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0080_MName', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0080_MName];

SELECT * INTO [RISMigration].[dbo].[PtntName_0080_MName]
FROM
        (SELECT DISTINCT [pt_middle], COUNT([pt_middle]) AS RecCount
                FROM
                        (SELECT ISNULL([pt_middle],'<NULL>') AS pt_middle
                                FROM [RISSource].[dbo].[pat_name]) AS B
                GROUP BY [pt_middle]) AS A
        ORDER BY [pt_middle]
GO

PRINT ''PRINT 'This test looks for invalid characters in Middle Name and flags them for further
processing. Output to PtntName_0081__Wrk01.'

/**
        Field 8 part 2: Now start looking for anomalies and report them.
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0081__Wrk01', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0081__Wrk01];

SELECT [pt_middle]
        , [RecCount]
        , CAST (CASE WHEN [pt_middle] LIKE ' %' THEN 1 ELSE 0 END AS BIT) AS [LeadingSpace]
        , CAST (CASE WHEN [pt_middle] LIKE '%[0-9]%' THEN 1 ELSE 0 END AS BIT) AS [NumericVal]
        , CAST (CASE WHEN [pt_middle] LIKE '%[!@#$%^&*()_+={}:;<>,.?/]%'
                                        OR [pt_middle] LIKE '%[[]%'
                                        OR [pt_middle] LIKE '%]%' THEN 1 ELSE 0 END AS BIT) AS
[SymbolVal]

        INTO [RISMigration].[dbo].[PtntName_0081__Wrk01]
        FROM [RISMigration].[dbo].[PtntName_0080_MName]
        ORDER BY [pt_middle]
GO

PRINT ''PRINT 'This test takes the content of PtntName_0081__Wrk01 and reports the records with
apparent anomalies. Output to PtntName_0081_MName.'

/**
        Field 8 part 3: Now start reporting the anomalies.
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0081_MName', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0081_MName];

SELECT *
        INTO [RISMigration].[dbo].[PtntName_0081_MName]
        FROM [RISMigration].[dbo].[PtntName_0081__Wrk01]
```

PtntName Analysis

```
        WHERE [LeadingSpace] = 1
                OR [NumericVal] = 1
                OR [SymbolVal] = 1
        ORDER BY [pt_middle]
GO

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

/**
        Field 9 is the Title field. The analysis lists values and counts for each value.
        Check the output table for unacceptable values.
        Note - the SELECT DISTINCT process doesn't find NULL records normally so special attention has
been applied.
**/

PRINT '' PRINT 'This test summarises Title and should produce a large number of records. Check the
output for unacceptable values of Title. Output to PtntName_0090_Title.'

/**
        Field 9 part 1: Start by summarising the Title values and counting them .
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0090_Title', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0090_Title];

SELECT * INTO [RISMigration].[dbo].[PtntName_0090_Title]
FROM
        (SELECT DISTINCT [pt_title], COUNT([pt_title]) AS RecCount
                FROM
                        (SELECT ISNULL([pt_title],'<NULL>') AS pt_title
                                FROM [RISSource].[dbo].[pat_name]) AS B
                GROUP BY [pt_title]) AS A
        ORDER BY [pt_title]
GO

PRINT ''PRINT 'This test looks for invalid characters in Title and flags them for further processing.
Output to PtntName_0091__Wrk01.'

/**
        Field 9 part 2: Now start looking for anomalies and report them.
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0091__Wrk01', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0091__Wrk01];

SELECT [pt_title]
        , [RecCount]
        , CAST (CASE WHEN [pt_title] LIKE ' %' THEN 1 ELSE 0 END AS BIT) AS [LeadingSpace]
        , CAST (CASE WHEN [pt_title] LIKE '%[0-9]%' THEN 1 ELSE 0 END AS BIT) AS [NumericVal]
        , CAST (CASE WHEN [pt_title] LIKE '%[!@#$%^&*()_+={}:;<>,.?/]%'
                                        OR [pt_title] LIKE '%[[]%'
                                        OR [pt_title] LIKE '%]%' THEN 1 ELSE 0 END AS BIT) AS
[SymbolVal]

        INTO [RISMigration].[dbo].[PtntName_0091__Wrk01]
        FROM [RISMigration].[dbo].[PtntName_0090_Title]
        ORDER BY [pt_title]
GO

PRINT ''PRINT 'This test takes the content of PtntName_0091__Wrk01 and reports the records with
apparent anomalies. Output to PtntName_0091_Title.'

/**
        Field 9 part 3: Now start reporting the anomalies.
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0091_Title', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0091_Title];

SELECT *
        INTO [RISMigration].[dbo].[PtntName_0091_Title]
        FROM [RISMigration].[dbo].[PtntName_0091__Wrk01]
        WHERE [LeadingSpace] = 1
                OR [NumericVal] = 1
```

PtntName Analysis

```
                OR [SymbolVal] = 1
        ORDER BY [pt_title]
GO

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

/**
        Field 10 is the Prefix field. The analysis lists values and counts for each value.
        Check the output table for unacceptable values.
        Note - the SELECT DISTINCT process doesn't find NULL records normally so special attention has
been applied.
**/

PRINT '' PRINT 'This test summarises Prefix and should produce a large number of records. Check the
output for unacceptable values of Prefix. Output to PtntName_0100_Prefix.'

/**
        Field 10 part 1: Start by summarising the Prefix values and counting them .
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0100_Prefix', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0100_Prefix];

SELECT * INTO [RISMigration].[dbo].[PtntName_0100_Prefix]
FROM
        (SELECT DISTINCT [pt_prefix], COUNT([pt_prefix]) AS RecCount
                FROM
                        (SELECT ISNULL([pt_prefix],'<NULL>') AS pt_prefix
                                FROM [RISSource].[dbo].[pat_name]) AS B
                GROUP BY [pt_prefix]) AS A
        ORDER BY [pt_prefix]
GO

PRINT ''PRINT 'This test looks for invalid characters in Prefix and flags them for further processing.
Output to PtntName_0101__Wrk01.'

/**
        Field 10 part 2: Now start looking for anomalies and report them.
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0101__Wrk01', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0101__Wrk01];

SELECT [pt_prefix]
        , [RecCount]
        , CAST (CASE WHEN [pt_prefix] LIKE ' %' THEN 1 ELSE 0 END AS BIT) AS [LeadingSpace]
        , CAST (CASE WHEN [pt_prefix] LIKE '%[0-9]%' THEN 1 ELSE 0 END AS BIT) AS [NumericVal]
        , CAST (CASE WHEN [pt_prefix] LIKE '%[!@#$%^&*()_+={}:;<>,.?/]%'
                                        OR [pt_prefix] LIKE '%[[]%'
                                        OR [pt_prefix] LIKE '%]%' THEN 1 ELSE 0 END AS BIT) AS
[SymbolVal]

        INTO [RISMigration].[dbo].[PtntName_0101__Wrk01]
        FROM [RISMigration].[dbo].[PtntName_0100_Prefix]
        ORDER BY [pt_prefix]
GO

PRINT ''PRINT 'This test takes the content of PtntName_0101__Wrk01 and reports the records with
apparent anomalies. Output to PtntName_0101_Prefix.'

/**
        Field 10 part 3: Now start reporting the anomalies.
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0101_Prefix', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0101_Prefix];

SELECT *
        INTO [RISMigration].[dbo].[PtntName_0101_Prefix]
        FROM [RISMigration].[dbo].[PtntName_0101__Wrk01]
        WHERE [LeadingSpace] = 1
                OR [NumericVal] = 1
                OR [SymbolVal] = 1
        ORDER BY [pt_prefix]
```

PtntName Analysis

```
GO

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

/**
        Field 11 is the Suffix field. The analysis lists values and counts for each value.
        Check the output table for unacceptable values.
        Note - the SELECT DISTINCT process doesn't find NULL records normally so special attention has
been applied.
**/

PRINT '' PRINT 'This test summarises Suffix and should produce a large number of records. Check the
output for unacceptable values of Suffix. Output to PtntName_0110_Suffix.'

/**
        Field 11 part 1: Start by summarising the Suffix values and counting them .
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0110_Suffix', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0110_Suffix];

SELECT * INTO [RISMigration].[dbo].[PtntName_0110_Suffix]
FROM
        (SELECT DISTINCT [pt_suffix], COUNT([pt_suffix]) AS RecCount
                FROM
                        (SELECT ISNULL([pt_suffix],'<NULL>') AS pt_suffix
                                FROM [RISSource].[dbo].[pat_name]) AS B
                GROUP BY [pt_suffix]) AS A
        ORDER BY [pt_suffix]
GO

PRINT ''PRINT 'This test looks for invalid characters in Suffix and flags them for further processing.
Output to PtntName_0111__Wrk01.'

/**
        Field 11 part 2: Now start looking for anomalies and report them.
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0111__Wrk01', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0111__Wrk01];

SELECT [pt_suffix]
        , [RecCount]
        , CAST (CASE WHEN [pt_suffix] LIKE ' %' THEN 1 ELSE 0 END AS BIT) AS [LeadingSpace]
        , CAST (CASE WHEN [pt_suffix] LIKE '%[0-9]%' THEN 1 ELSE 0 END AS BIT) AS [NumericVal]
        , CAST (CASE WHEN [pt_suffix] LIKE '%[!@#$%^&*()_+={}:;<>,.?/]%'
                                        OR [pt_suffix] LIKE '%[[]%'
                                        OR [pt_suffix] LIKE '%]%' THEN 1 ELSE 0 END AS BIT) AS
[SymbolVal]

        INTO [RISMigration].[dbo].[PtntName_0111__Wrk01]
        FROM [RISMigration].[dbo].[PtntName_0110_Suffix]
        ORDER BY [pt_suffix]
GO

PRINT ''PRINT 'This test takes the content of PtntName_0111__Wrk01 and reports the records with
apparent anomalies. Output to PtntName_0111_Suffix.'

/**
        Field 11 part 3: Now start reporting the anomalies.
**/

IF OBJECT_ID('RISMigration.dbo.PtntName_0111_Suffix', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[PtntName_0111_Suffix];

SELECT *
        INTO [RISMigration].[dbo].[PtntName_0111_Suffix]
        FROM [RISMigration].[dbo].[PtntName_0111__Wrk01]
        WHERE [LeadingSpace] = 1
                OR [NumericVal] = 1
                OR [SymbolVal] = 1
        ORDER BY [pt_suffix]
GO
```

PtntName Analysis

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 tests

This test should produce zero records. Output to PtntName_0010_DupPK.

(0 row(s) affected)

                                Field 2 not tested

                                Field 3 not tested

                                Field 4 tests

This test should produce about 7 records (maybe less when any errors are corrected). Check the output
for unacceptable values of SEX. Output to PtntName_0040_Sex.

(8 row(s) affected)

This test should produce about 2688 records (less when any errors are corrected). Output to
PtntName_0040_Sex_Detail.

(2666 row(s) affected)

                                Field 5 tests

This an intermediate process and should produce many records (initially 1629). No need to check.
Output to PtntName_0050__Wrk01.

(1636 row(s) affected)

This test should produce records for every month between the first and last dates. No need to check.
Output to PtntName_0050_DoB.

(3811 row(s) affected)

                                Field 6 tests

This test summarises Last name and should produce a large number of records. Check the output for
unacceptable values of Last Name. Output to PtntName_0060_LName.

(113704 row(s) affected)

This test looks for invalid characters in Last Name and flags them for further processing. Output to
PtntName_0061__Wrk01.

(113704 row(s) affected)

This test takes the content of PtntName_0061__Wrk01 and reports the records with apparent anomalies.
Output to PtntName_0061_Lname.

(283 row(s) affected)

                                Field 7 tests

This test summarises Last name and should produce a large number of records. Check the output for
unacceptable values of Last Name. Output to PtntName_0070_FName.

(174582 row(s) affected)

This test looks for invalid characters in First Name and flags them for further processing. Output to
PtntName_0071__Wrk01.
```

PtntName Analysis

(174582 row(s) affected)

This test takes the content of PtntName_0071__Wrk01 and reports the records with apparent anomalies. Output to PtntName_0071_FName.

(2147 row(s) affected)

Field 8 tests

This test summarises Middle Name and should produce a large number of records. Check the output for unacceptable values of Last Name. Output to PtntName_0080_MName.

(44439 row(s) affected)

This test looks for invalid characters in Middle Name and flags them for further processing. Output to PtntName_0081__Wrk01.

(44439 row(s) affected)

This test takes the content of PtntName_0081__Wrk01 and reports the records with apparent anomalies. Output to PtntName_0081_MName.

(390 row(s) affected)

Field 9 tests

This test summarises Title and should produce a large number of records. Check the output for unacceptable values of Title. Output to PtntName_0090_Title.

(2 row(s) affected)

This test looks for invalid characters in Title and flags them for further processing. Output to PtntName_0091__Wrk01.

(2 row(s) affected)

This test takes the content of PtntName_0091__Wrk01 and reports the records with apparent anomalies. Output to PtntName_0091_Title.

(2 row(s) affected)

Field 10 tests

This test summarises Prefix and should produce a large number of records. Check the output for unacceptable values of Prefix. Output to PtntName_0100_Prefix.

(76 row(s) affected)

This test looks for invalid characters in Prefix and flags them for further processing. Output to PtntName_0101__Wrk01.

(76 row(s) affected)

This test takes the content of PtntName_0101__Wrk01 and reports the records with apparent anomalies. Output to PtntName_0101_Prefix.

(7 row(s) affected)

Field 11 tests

This test summarises Suffix and should produce a large number of records. Check the output for unacceptable values of Suffix. Output to PtntName_0110_Suffix.

(3 row(s) affected)

This test looks for invalid characters in Suffix and flags them for further processing. Output to PtntName_0111__Wrk01.

(3 row(s) affected)

PtntName Analysis

This test takes the content of PtntName_0111__Wrk01 and reports the records with apparent anomalies.
Output to PtntName_0111_Suffix.

(2 row(s) affected)

Populate

Purpose

This document explains the mapping of the Siemens RIS to the Agfa RIS. Its sibling documents include:

- A series of spreadsheets – one per Agfa flat-file described in the Agfa document "HL7_Data_Migration_CSV_Layout.pdf"; and
- A series of support spreadsheets for mapping the contents of various filed in the Siemens RISPACS to the values they will have in the Agfa RISPACS.

These spreadsheets are titled "Populate<flat-table-name> nn.nn.xlsx". Version 00.01 of each of these spreadsheets comprise a first-cut by data analysis staff.

Agfa Migration Format Files

These tables list the Agfa fields being provided in the flat-files and where possible identifies a possible source for the Siemens field that will populate the Agfa field. Some of these have been populated by the data analysis staff. In some instances the first-cut is unlikely to be incorrect however in many instances the reliability of the first-cut is less certain, and in some instances the situation is so unclear that the first-cut makes no attempt to offer suggestions. Comments are provided to highlight observations/concerns.

Each of these spreadsheets will feed-in to the SQL script of the same name (prefixed by "aaa_Agfa_2_" to assist in managing the SQL scripts) that will populate the staging tables from which the flat-files will be exported.

These tables must be populated and signed-off by the client then applied to the SQL scripts database prior to final migration.

Support Tables

There are some fields in the Siemens RISPACS where the value will not fit into the corresponding field in the Agfa RISPACS. These fields hold coded values such as "Priority". For the migration of existing Siemens data to the Agfa database these existing values must be translated into a value suitable for the constraints presented by the Agfa database. These tables are uploaded into the Migration database for referencing by the migration software.

These tables must be populated such that they demonstrate the equivalence between the Siemens values and the relevant Agfa values then signed-off by the client then uploaded to the Migration database prior to final migration.

Observations to-date

Concerns about data

The Agfa documents "HL7_Data_Migration_CSV_Layout.pdf" and "DICOM_Data_Migration_CSV_Layout.pdf" describe the data required by Agfa. They don't include much of the data in the Siemens RISPACS such that I have serious concerns that the Agfa RISPACS won't provide the functionality of the Siemens RISPACS that is expected by ACT Health. For example:

- The Service Request flat-file appears to equate to the Siemens [visit_order] table. From this it appears that the Agfa information currently available doesn't include the concept of the Siemens [visit] table. Whilst some degree of de-normalisation relative to theoretically complete normalisation is accepted to facilitate practicality and functionality, the lack of an

equivalent to the [visit] table appears to seriously impact the functionality of the Agfa RISPACs relative to the Siemens RISPACS. At the moment the Agfa RISPACS appears to be little more than a data repository as opposed to a management system.

I have confirmed with Jess that the Siemens [visit] concept isn't managed within ACTPAS for outpatients therefore this situation could make mapping the Siemens RISPACs to the Agfa RISPACS problematic if not impossible.

- The Requested Procedure flat file appears to equate to the Siemens [visit_activity] table. The Siemens [visit_activity] table has a number of child tables that apparently provide supporting information, however that is not being migrated to Agfa. Further, the lack of information from Siemens related to the data structure of its RISPACS causes concerns regarding ensuring that all historical requested procedures have been identified as well as correctly identifying and linking the data sources for the Agfa fields [StudyInstanceUid], [ReasonForStudy], [ClinicalInfo] and [StudyStatus] to the Procedure flat file.

Assuming there isn't information already available that alleviates this concern, I believe it is time that the project got some solid and complete information form Agfa as to what their RISPACS will actually do and how it works. Until that information is available further mapping of data appears to be problematic.

Concerns about data processing

The Agfa document "HL7_Data_Migration_CSV_Layout.pdf" advises the flat-files "unlimited" fields are not able to accept pipe or linefeed – requiring that those characters be replaced with escape sequences. It is unclear whether the Siemens RISPACS data contains those characters, however it is clear from visually inspecting the text (current database configuration precludes text searches) that the Siemens RISPACS does use some sort of carriage-return or line-feed (or both). Whether the data in the Siemens RISPACS conflicts with the Agfa requirements depends on the precise nature of the Agfa constraint and the text encoding standards used in the Siemens RISPACS. Further information is required in order to fully understand the problem and therefore the solution.

In all probability, searching of the Siemens RIS text will be required. As such the SQL Server will require text-search capability.

Patient

See spreadsheet "PopulatePatient nn.nn.xlsx" where "nn.nn" reflects the pertinent version.

The Patient data in the Siemens RISPACS is extremely lacking in records from the [pat_name] table – as such it will be an extremely poor source of data. As a consequence of this deficiency, the Agfa Patient data is likely to be migrated directly from ACTPAS so this flat-file is unlikely to be required from the Siemens RISPACS. As such it is likely that sign-off of this spreadsheet won't be required. However it will be necessary to map whatever patient identification system Agfa uses (presumably the ACTPAS URN) to the Siemens [pat_itn] so as to facilitate inserting that Agfa patient identifier into the relevant data being migrated.

Should it transpire that the Siemens RISPACS is to be used as the source of migration of the RISPACS data then the Patient flat-file spreadsheet is reasonably complete (as far as Siemens RISPACS ERDs and available data fields will permit).

Note: much of the Patient data in the Siemens RISPACS does not appear to be accommodated in the Agfa RISPACS.

Populate

Doctor

See spreadsheet "PopulateDoctor nn.nn.xlsx" where "nn.nn" reflects the pertinent version.

The Doctor table in the Siemens RISPACS does not appear to fully reflect the doctors listed in the tables listing the activities of those doctors, and unfortunately the lack of a suitable value in the [dr_no] field of the relevant activities tables precludes reliable cross-referencing. Observations suggest there are many "doctors" listed in the relevant activities tables that are not listed in the Doctor table, and the significant lack of supporting information makes reverse-engineering the data essentially impossible for most faulty records in the relevant activities tables. Therefore the Siemens RISPACS does not appear to be an adequate source of information for the Agfa RISPACS.

Should it transpire that the Siemens RISPACS is to be used as the source of migration of the RISPACS data then the Doctor flat-file spreadsheet is reasonably complete (as far as Siemens RISPACS ERDs and available data fields will permit).

Doctor may or may not be migrated from the Siemens RISPACS due to Agfa requesting the data be placed in a spreadsheet via other processes. As such it is likely that sign-off of this spreadsheet won't be required. However unless the Siemens [dr_no] is adopted in the Agfa system it will be necessary to map whatever doctor identification system Agfa uses to the Siemens [dr_no] so as to facilitate inserting that Agfa doctor identifier into the relevant data being migrated.

The Doctor flat-file is reasonably self-evident, however the Siemens application lacks a number of data fields present in the Agfa application, plus many of the Siemens data fields that would be migrated to the Agfa application are empty. Doctor may or may not be migrated from the Siemens RISPACS due to Agfa requesting the data be placed in a spreadsheet via other processes.

Service Request

See spreadsheet "PopulateServiceRequest nn.nn.xlsx" where "nn.nn" reflects the pertinent version.

The Service Request flat-file appears to equate to the Siemens [visit_order] table. However the lack of an equivalent to the Siemens [visit] table requires that some fields in the Service Request flat-file be populated from other tables by navigating up the entity relationships.

Agfa [PatientId], [IssuerOfPatientId], [OrderPriority] and [OrderCreationDateTime] are quite self-evident, however the remaining fields are less clear. The source of [PlacerOrderNumber] versus [FillerOrderNumber] is unclear (Siemens seems to have only [ord_no]) and the source of the "Requesting" information is unclear given the Siemens application presumably has "Requesting" information in some tables and "Providing" information in others. Further information on the Siemens application will hopefully provide solutions.

Requested Procedure

See spreadsheet "PopulateRequestedProcedure nn.nn.xlsx" where "nn.nn" reflects the pertinent version.

The Requested Procedure flat-file appears to equate to the Siemens [visit_activity].

The Siemens RISPACS and Agfa RISPACS appear to have significantly differing views on the subject of modality/procedures. The Siemens RISPACS appears to rely on [dept], [proc_no], [proc_descr_short], [proc_descr_long] and [seq_no] whereas the Agfa RISPACS has [ProcedureCode], [ProcedureDescription], [Modality], [RequestedProcedureId] and [ScheduledProcedureStepId]. It will be necessary to map the contents of the Siemens RISPACS to the values required by the Agfa RISPACS.

Populate

Report

See spreadsheet "PopulateReport nn.nn.xlsx" where "nn.nn" reflects the pertinent version.

The Report flat-file appears to equate to the Siemens [result_text] table. However the [result_text] table has more text fields than the Report flat-file will accept. Concatenating the text fields from the [result_text] table (with suitable delimiters to identify which bit came from where to the reader) is a possible option. Should the Agfa RISPACS permit multiple instances of Report records for a given Accession Number ([acc_itn]) then placing one Siemens text field in each might resolve the problem, however this option might be limited to two entries – one each of Status = "P" or "R".

Attachment

See spreadsheet "PopulateAttachment nn.nn.xlsx" where "nn.nn" reflects the pertinent version.

Siemens RISPACS does not appear to have the equivalent of the Agfa "Attachment". As such there appears to be no data to migrate and so this spreadsheet doesn't need to be vetted by the business.

Support Tables

PopulatePriorityMap

See spreadsheet "PopulatePriorityMap nn.nn.xlsx" where "nn.nn" reflects the pertinent version.

This table is used to map the Siemens [visit_order] table [priority] field into the Agfa [Service Request] table [OrderPriority] field. Version 00.01 maps all Siemens priority values to "?".It will be necessary for the customer to populate this spreadsheet to map the contents of the Siemens RISPACS to the values required by the Agfa RISPACS.

INTEGRATED DIAGNOSTIC IMAGING SOLUTION

DATA MIGRATION PROCESS

UCPH DIGITAL SOLUTIONS PROGRAM

Contents

Migration Process

Purpose

This document contains a series of snippets of information related to the data migration. Much of this document should be read in association with "Figure 1: Flowchart" on page 7.

Note – this document is based on limited information in that information about the data format requirements of the new RIS and the new environments for excluded data is not yet available. Hence that part of the process has not been developed.

Migration overview

Data cleansing is generally a process that loops until all problems are resolved. The loops generate initial and subsequently additional fixes for appending to a record of changes. The fixes must be approved by the relevant business area.

Testing shall produce lists records that appear to require resolution. The testing will be examining the data to check:

- Data plausibility against expectations based on the purpose of the application;
- Data for consistency with current needs under criteria such as age and function; and
- Data integrity against relational database standards as applied to the application schema.

Records identified by the migration team that are of concern shall be communicated to the relevant business area for a decision. The business area shall provide a response detailing the action to be taken (if any). The response for a given table might be:

- Lists (list of records and the action to be taken);
- Criteria (criteria and supporting material for coding and the action to be taken); or
- Both of the above.

The resolution might be:

- Delete the data;
- Migrate the data elsewhere (e.g. an new application or storage environment); or
- Fix the data by changing values.

The resolutions shall be executed by taking a copy of the source data into a working area called Stage 1 and making the changes to that copy. Changes shall be in the order:

- Delete (remover the record from "Stage 1" and record the fact in the audit/log in "Stage 5");
- Migrate elsewhere (copy the record to "Stage 3" and record the fact in the audit/log in "Stage 5") – NOTE – some records/tables that are migrated elsewhere might need to be retained in "Stage 1" for further processing in "Stage 1" or even migration to the new application;

- Edit (make the relevant change to the record in "Stage 1" and record the fact in the audit/log in "Stage 5").

Given there are risks that the changes will raise other issues the data in "Stage 1" will be rechecked against all tests. Initial checks are likely to exhaust other issues therefore subsequent checks are more likely to be focussed on "data integrity against relational database standards as applied to the application schema", however integrity checks might also trigger revision of earlier decisions about data. The data set in "Stage 1" shall therefore be regenerated each time a change is made to the material provided by the business, and will progressively approach the state of ideal data for the migration.

All changes to data (including deletion) to this point shall be logged in audit/log tables.

Once the data in "Stage 1" is clear of issues then:

- The data in "Stage 1" that is to be migrated to the new applications will be transformed as required and stored in suitable tables in "Stage 2";
- Data that is in "Stage 3" shall be transformed as required (e.g. de-normalised) and stored in suitable tables in "Stage 4".

Recording of transformation in audit/log tables may be required. This will be determined when the nature of the transformation is understood.

The testing

All testing shall be executed on a copy of the data in "Stage 1". This facilitates retesting of data post the application of current changes.

The data of concern for each table shall be conveyed to the relevant business area either in the form of a copy of the records (or relevant fields) that includes the index field(s) or as a description of those records (e.g. summarised data that conveys the issue).

Testing shall include:

- Vetting of all fields within each record for consistency within the field;
- Vetting of all fields across each record for consistency within the record;
- Vetting of all relationships for consistency between the tables for issues such as referential integrity.

The changes

The resolution for each table shall be conveyed to the migration team either in the form of:

- The criteria that identifies the records (e.g. field name and range of values and the changes to be performed); or
- A list comprising the index field(s) and the changes to be performed (some tables apparently don't have unique indexes so an artificial key might have to be created).

Given resolution of some issues might generate problematic data (generally in related tables) then it might be necessary to execute multiple iterations of this process on some tables.

The resolution for each table shall be incorporated in the processing by the migration team as appropriate. All iterations of changes for each table shall be combined into a single set of changes; however the identity of the iteration will be retained in the combined set for inclusion in the audit/log.

The processing

The migration environment shall maintain a pristine copy of the source data for refreshing the migration process at the start of each test cycle

The migration development process shall:

1. Generate an empty copy of the audit tables in "Stage 3";
2. Generate an empty copy of the audit tables (see section Audit/log table form) in "Stage 5";
3. Copy the pristine version of the relevant tables into "Stage 1";
4. Extract records that are to be migrated elsewhere to "Stage 3" and record the event in the relevant audit/log;
5. Delete records that are to be deleted from "Stage 1" and record the event in the relevant audit/log;
6. Edit records that are to be edited in "Stage 1" and record the event in the relevant audit/log;
7. Test the relevant data tables to identify problematic records for resolution by the relevant business area;
8. Retesting and convey outstanding issues for resolution and restart at step 1 when revised changes have been incorporated in the "Lists/criteria & action" set;
9. Once the data is clean then transform the "Stage 1" records into the required format and store in "Stage 2";
10. Transform the "Stage 3" records into the required format and store in "Stage 4".

List/criteria & actions

As stated earlier, the fix shall be specified either as a list of record or a set of criteria to identify records. They shall either be provided by or compiled from information provided by the business.

Fixes in the form of lists shall be applied to the data in the form of tables specifying the unique index necessary to uniquely identify the record and the individual MigrateStatus, Fix Cycle and MigrateReason values.

Fixes in the form of criteria shall be applied to the data in the form of SQL code specifying the filter necessary to identify the records (filed names and values/ranges) and the MigrateStatus, Fix Cycle and MigrateReason values to be applied to all matching records.

In both instances, where this is "Edit" then the statement must include the field name and the new value of that field. The data type of the field to be changed will have to be considered in the execution of said change.

Editing of records might apply to multiple fields. It is unlikely that this will occur for a significant number of fields however consideration might be needed to change this process in the event we have any records requiring extreme levels of changes.

Format for list/criteria

	Delete	Elsewhere	Edit
List	Index values for deleting	Index values for moving	Index values for editing
	"MigrateStatus" = "Delete"	"MigrateStatus" = "Elsewhere"	"MigrateStatus" = "Edit"
	"Fix Cycle" = next cycle number	"Fix Cycle" = next cycle number	"Fix Cycle" = next cycle number
	"MigrateReason" = business-provided text	"MigrateReason" = business-provided text	"MigrateReason" = business-provided text
			"FieldName" = field to be changed
			"FieldVal" = value to be inserted in field, content consistent with field constraints in the source database
Criteria	Criteria for deleting	Criteria for moving	Criteria for editing
	"MigrateStatus" = "Delete"	"MigrateStatus" = "Elsewhere"	"MigrateStatus" = "Edit"
	"Fix Cycle" = next cycle number	"Fix Cycle" = next cycle number	"Fix Cycle" = next cycle number
	"MigrateReason" = business-provided text	"MigrateReason" = business-provided text	"MigrateReason" = business-provided text
			"FieldName" = field to be changed
			"FieldVal" = value to be inserted in field, content consistent with field constraints in the source database

Audit/log table form

The audit table for each source table shall be stored in "Stage 5" and shall contain all the data fields of the original table plus the action fields. For records that are edited there will be an audit/log entry containing the field values before the change and an entry containing the field values after the change.

Beyond the data fields of the original table there will be the fields:

- A field named MigrateStatus (text 10 characters) which can have the values "Elsewhere", "Delete", "Before" and "After";
- A field named Fix Cycle (integer); and
- A field named MigrateReason (text 50 characters) for free-form text explaining the action.

These tables can be fed back to the business to inform them of the details of the changes and for sign-off after the migration.

Migration order

The RISPACS is of significant importance to the operation of TCH and Calvary 24/7. As such down-time must be minimised and so the transition from the current RISPAC to the new RISPAC must be managed so as to minimise the impact to the operation of TCH and Calvary.

Given the volume of data involved and the lack of information related to the speed of processing the migration (possibly both network and server/host issues) it is difficult to determine what level of management might be needed beyond observing referential integrity (if needed). Having said that, some assumptions can be made. They include:

- Lookup tables generally won't vary during the production migration process so they can be pre-populated.
- Assuming that the new RISPAC enforces referential integrity in the database then lookup tables must be migrated first so as to facilitate entries in the dependent tables. Where there are dependencies between lookup tables those dependencies must be accommodated in the sequence of migration.
- Lookup tables related to industry-standard matters such as item-codes are likely to be part of the vendor's package. Lookup tables related to customer-specific matters such as hospital names, rooms, equipment, etc. might be part of the initial build. Some or all of these might be in situ prior to the migration.

Some dynamic data tables are large and so might be time-consuming to migrate. The existence of any such time issues will become clear when the details of the hardware/network are known and testing commences. Should time issues occur then data will be prioritised (including managing the referential integrity issues related to delayed data) with urgent data migrated quickly and the data of a lower urgency possibly migrated after go-live.

Where migration of data within tables is to be so managed then priority lists/criteria will be required. The precise mechanism of this managing of migration of data will depend on the need and functionality (if any) available under the vendor's migration tools. This part of the migration process will be able to accommodate any reasonable needs should they not be available under the vendor's migration tools.

Flowchart

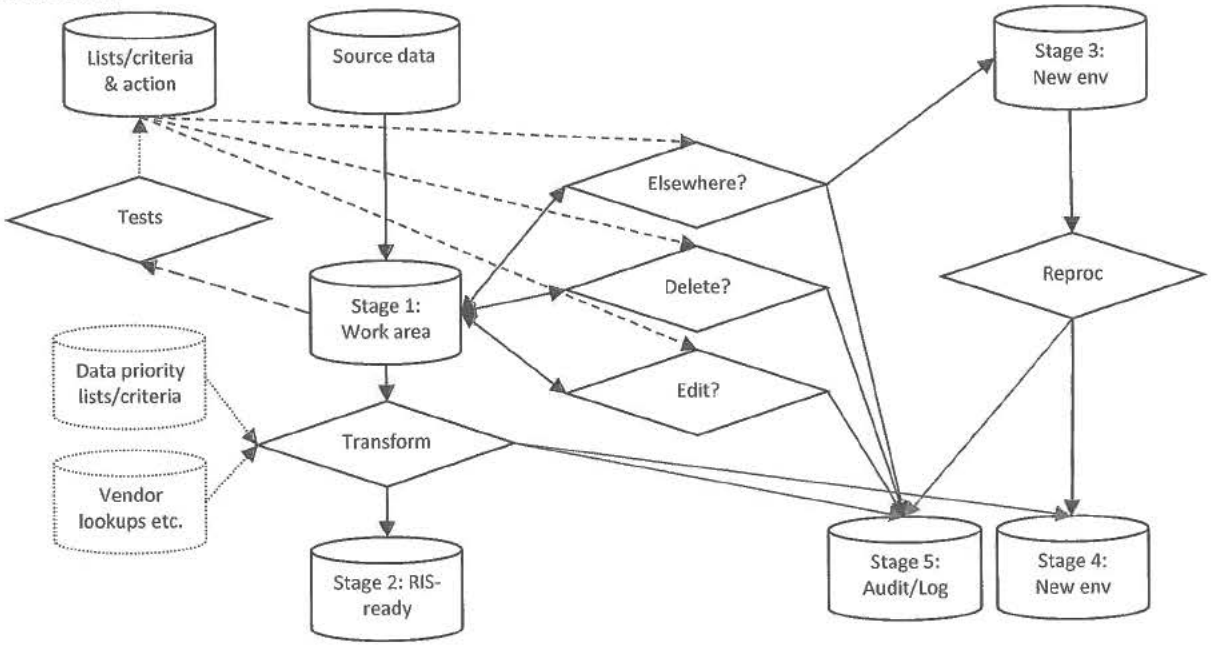

Figure 1: Flowchart

Data priority lists/criteria

The migration process might require some prioritisation of the data transfer beyond the order of the tables. This is the repository for lists/criteria that facilitate ordering the sequence of the data transferred.

Delete

Executes the Lists/criteria & action processes related to deleting records from "Stage 1". Record of the deletions is placed in "Stage 5".

Edit

Executes the Lists/criteria & action processes related to editing records in "Stage 1". Record of the edits ("before" and "after" copies) is placed in "Stage 5".

Elsewhere

Executes the Lists/criteria & action processes related to migrating records from "Stage 1" to other storage environments. Record of the migration is placed in "Stage 5".

Lists/criteria & action

This is the repository for the list/criteria specifying changes that must occur to the data prior to migration (i.e. cleansing).

Reproc

Executes the processes related to transforming records placed temporarily in "Stage 3" to other storage environments. Record of the transformation is placed in "Stage 4".

Source data

This is the repository for a copy of the source data from which subsequent runs will be executed. During the development and testing of the migration this repository will store a copy of a recent back-up. During the real migration this repository will store an up-to-date copy of the data.

Stage 1

The migration process is based on taking a full copy of the data then removing anything that will not be migrated to the new RISPAC and correcting any errors. In removing anything that will not be migrated to the new RISPAC, that material which will be migrated elsewhere is extracted.

This is the repository of the original data that is progressively modified by the various cleaning tools until it is free of errors. Once free of errors the data will then be transformed to the format required of the new RISPAC.

Stage 2

This is the repository of the cleansed copy of "Stage 1" after it is transformed in accordance with the needs of the vendor and the needs of managing the migration process.

Stage 3

This is the repository of the uncleansed data from "Stage 1" that is being migrated elsewhere.

Stage 4

This is the repository of the data from "Stage 3" after any transformation for that migration.

Stage 5

This is the repository of the log of all processing performed on the data in "Stage 1".

Tests

Contains the full suite of tests used to identify problem records. The test is repeated until Lists/criteria & action contains resolution for all problem records

Transform

Contains the processes necessary to transform the cleansed data into the form specified by the vendor. This might require the generation of audit trails and/or material that must be put in a new environment. This will be clarified once the new application is better understood.

Vendor lookups etc.

This is the repository for all vendor-sourced information specifying the transformation process.

Managing change records

Changes to data must be recorded and properly managed so as to facilitate audit and investigate error. To this end all communications must be retained. This includes all outgoing and incoming emails and data sets. Given the magnitude of the overall process and given physical changes relate only to tables (there is impact on the relationships but the actual change is to the tables) then all documentation shall be stored by table (i.e. subdirectory for each table) so as to facilitate understanding by anyone examining the artefacts after the event. Further, given change might require multiple cycles then the table sub-directory will have a lower level directory for each change cycle. Each change-cycle directory shall have subdirectories for each of the stages of change identified below.

Where the nature of the table or the changes becomes even slightly complex, consideration should also be given to inclusion of a chronological narrative in MS Word stored in the top directory for each table.

To facilitate this, a directory shall be created on the Shared Drive that provides read/write access to select project staff and read-only access to select business staff. Access shall be provided using standard access control processes but under the control of the project.

Given the data being changed might be personal/confidential then all such information shall be stored in a directory for which access is limited to authorised staff. Further, to ensure minimum risk of unauthorised change to the relevant files, write-access will be available only to a small number of project staff.

Where data conveyed is "public" (e.g. lookup tables that do not contain any data connecting them with patients or staff) then any or all of the relevant records may be conveyed without restriction in terms of privacy, however patient-related or staff-related records shall be limited where possible to at-most the index fields for the table or preferably the list of field values that describe the records (e.g. date range).

Authorisation to make changes to the list of authorised staff shall be limited to:

- Program manager (currently Sarah Norton);
- Project manager (currently [redacted]
- SSICT Project Manager (currently Nick Crossley); and
- Data Analyst (currently [redacted]).

Emails copied into the Windows directory structure as .msg files will normally adopt the subject line as the name of the email. This can cause issues where emails share a subject line. Therefore emails copied to the Windows directory structure shall be renamed with the data and time the email was sent (in the form "yymmdd hhmm" (meaning that name-sorts will put the emails in order) preceding the name and the default name suitably revised to reflect the content of the email).

Other files shall also have the date-time in the title – particularly where there might be multiple versions of a given file (e.g. lists).

The stages of change are:

- Test data to identify issues with data;
- Develop solutions with business areas;
- Execute changes specified by business areas;
- Repeat until all issues are resolved.

Test data to identify issues with data (subdirectory "1 – Test")

Testing shall involve SQL code to join and/or summarise data with a view to identifying issues for consideration by the business. The SQL code will generally be in the form of short programs that execute a simple join/test or summary that displays a particular aspect. The code and its output will be stored in documents (Word, Notepad, Excel) suitably named to demonstrate the purpose. Supplementary documents (generally descriptive support) can be included.

Develop solutions with business areas (subdirectory "2 – Solve")

The relevant output file and supporting text will be conveyed to the relevant business area. This may be by emailing the relevant output or by allowing the business area to read the file within this workspace.

Where data must be copied elsewhere, the location must be of sufficient security for the data being copied. The acceptability or otherwise of emails for this sensitive data must be determined. Every effort must be made to minimise the risk of personal data escaping.

All outgoing and incoming communications will be stored here. Where discussion/negotiation has occurred all emails will be stored here.

Incoming data (tables listing changes) will also be stored by the table they affect, and where the incoming data is not in itself adequate for migration to the SQL environment then the incoming data will be transformed into an acceptable form.

Execute changes specified by business areas (subdirectory "3 – Apply")

Applying changes shall involve SQL code and possibly tables generated from business input. The changes shall be applied to "Stage 1" as depicted in the flowchart, and the "Stage 3" and "Stage 5" outputs retained. The code and any tables will be stored here.

Repeat until all issues are resolved

The resultant status of "Stage 1" shall then be tested again until all issues are removed or resolved.

Transformation for the new RIS ("Stage 1" to "Stage 2")

The new RIS is likely to store and process data somewhat differently to the current RIS, and so the current data is unlikely to be in a format acceptable to the new RIS.

Once the new RIS is understood and any changes to convert current data to its format have been identified then this part can be updated to reflect that new knowledge. This might involve data going to "Stage 4" and/or "Stage 5". For now, interim repositories have been provided.

The time required to migrate the data to the new RIS is unclear (depends on network speed and server capabilities). Should testing demonstrate that the migration will take longer than it is possible to allow the RIS to be unavailable then migration of large tables will have to be in stages. To this end, for any problematic tables Stage 2 storage will include a field of type Integer that will be set to a value that represents the urgency of the data but will itself not be migrated. The migration process shall migrate data based on the value in that field. The setting entered into that field shall be based on decisions by the business as to data priorities.

Reprocessing for the new environment ("Stage 3" to "Stage 4")

Some data will undoubtedly leave the current RIS. It might be:

- Data that is out of date and so immediate access via the application is no longer required but it must remain available;
- Data that is out of scope for the new application and so must be stored (and processed?) elsewhere;
- Data that is not required and so will be deleted.

Once the data that is leaving the application has been identified and any changes to convert current data to its format have been identified then this part can be updated to reflect that new knowledge. This might involve data going to "Stage 5". For now, interim repositories have been provided.

UCPH Digital Solutions Program

Integrated Diagnostic Imaging Solution (IDIS)

Data Extraction Specification

DOCUMENT CONTROL

Version	Date	Created By	Description
00.01	10 Apr 2018	[redacted]	Initial RIS and PACS data extraction specification
00.02	23 May 2018	[redacted]	Audit count details updated Text attachment specifications updated Added file naming convention details for other attachments(Scan, Interactive and zSeg) Added folder structure specifications for the attachments
00.03	24 May 2018	[redacted]	Corrected the carriage return escape character for text attachments.
00.04	31 May 2018	[redacted]	Updates to text attachment requirements Separate rows for Financial class, Pregnancy and exam subdivision.
00.05	28 Sep 2018	[redacted]	Updates to the following Discontinued studies to be excluded from the Study extract Audit count : Provide count of discontinued studies in PACS Delta extract - cancelled exams to be filtered by cncl_dtime

RELATED DOCUMENTS

Version	Name	Endorsed By
	RIS_Data_Migration_CSV_Layout.docx	Agfa
	DICOM Data Migration CSV Layout.docx	Agfa
	User fields migration.docx	
	ZAI Types.docx	

Contents

Purpose:
This document defines the RIS and PACS data to be extracted for the bulk extract and for the subsequent delta extracts

RIS and PACS data to be extracted and delivered as follows:

- **Bulk extract** – All RIS and PACS data up to a certain cut-off date (date TBC) to be extracted and provided in the formats specified (HL7 and DICOM data specifications attached).
  - RIS data for bulk extract:
    - Extract all Cancelled exams (with or without a study/result), cancelled prior to the specified cut-off date. Include exams from dbo.visit_activity (exams cancelled before completion) and exams from dbo.activity (exams cancelled after completion)
    - Extract all Completed exams (with or without a study/result), completed prior to the specified cut-off date.
    - Extract all confirmed studies. (Pending and Linked studies to be excluded).
      Note: For exams with pending or linked studies, the exam details should be extracted, leaving the Study details blank.
      Examples:
      Scenario 1

Acc_itn	Study_UID	Study Status
[redacted]	[redacted]	C

The procedure extract should look like

Accession Number	Study_UID
[redacted]	[redacted]

Scenario 2

Acc_itn	Study_UID	Study Status
[redacted]	[redacted]	P

The procedure extract should look like

Accession Number	Study_UID
[redacted]	

Scenario 3

Acc_itn	Study_UID	Study Status
[redacted]	[redacted]	P
[redacted]	[redacted]	C

The procedure extract should look like

Accession Number	Study_UID
[redacted]	[redacted]

Scenario 4

Acc_itn	Study_UID	Study Status
[redacted]	[redacted]	P
[redacted]	[redacted]	C
[redacted]	[redacted]	C

The procedure extract should look like

Accession Number	Study_UID
[redacted]	[redacted]
[redacted]	[redacted]

- Extract all signed off results.
  Note: For exams results that have not been signed off yet, extract the exam details in the Service and Procedure files, with no records in the result file.
- Extract all patient and doctor data

- Attachments:
  - Extract all scanned documents (excluding the 0 byte documents) for all the exams included in the Procedure extract file.
    File Naming Convention: Scan_accno_uniqueidentifier.tif (an accession number can have multiple scans, uniqueidentifier-like dbo.scan_image.scan_itn to be added to make the filename unique). Example Scan_[redacted].tif
    Code value for the extract: dbo.scan_image_detail. img_type_mne
  - Extract the following interactive document types for all the exams included in the Procedure extract file:

VBLDOC	Billing info doc
VFOLD	Film Bag notes
VHOLD	Exams on hold
VORDER	RIS order doc
VPROT	Protocol doc
VREVW	Registrar comments
VTECH	Radiographer comments
VTRACK	stop-go document
VWTLST	waitlist doc

    File Naming Convention: Interactive_accno_uniqueidentifier.tif (an accession number can have multiple interactive documents, uniqueidentifier to be added to make the filename unique). Example Interactive[redacted].tif
    Code value for the extract: dbo.user_event.display_doc_mne
  - Extract zSegment documents for all the exams included in the Procedure extract file (specifications attached).
    zSegment documents for exams from dbo.activity to be mapped from dbo.activity_usr_flds
    zSegment attachments for exams from dbo.visit_activity to be mapped from dbo.visit_activity_usr_flds
    File Naming Convention: zSeg_accno.pdf, Example zSeg[redacted].pdf
    Code value for the extract: 'zSeg'
  - Text Attachments –
    - Financial Class text attachment:

Name	Mapping	Comments
FINCLASS	activity_usr_flds.usr_fld_1,	

	type = 'FINCL', code.cd where cd_type = 'FINCLS' visit_activity_usr_flds.usr_fld_1, type = 'FINCL', code.cd where cd_type = 'FINCLS'	

Code value for the extract: 'FINCLASS'

- Pregnancy text attachment:

Name	Mapping	Comments
PREGNANCY	activity_info.pregnant visit_order.pregnant	Allowed values – (YES,NO,UNKNOWN)

Code value for the extract: 'PREGNANCY'

- Exam subdivision text attachment:

Name	Mapping	Comments
SUBDIV	activity_info.prc_l_r visit_activity_info.prc_l_r	Allowed values - (Left,Bilateral,Right,'')

Code value for the extract: 'SUBDIV'

- Procedure text attachment : For all the exams included in the Procedure extract file, the following fields are to be extracted:

Name	Mapping	Comments
PATCLASS	activity_info.pt_class, code.descp where cd_type = 'PATCLS' visit_info.pt_class, code.descp where cd_type = 'PATCLS'	
MBSCodes	item.dtl_svc_cd, item.cpt_code1, item.cpt_code2, item.cpt_code3, item.cpt_code4, cpt_code.cpt_code	A comma separated list of all the MBS codes associated to an accession number.
PLACER_DETAILS	activity_info.ord_by_init, users.full_user_name [visit_order].ord_by_init, users.full_user_name	Format - last name, first name
TECH_DETAILS	activity_info.tech_init, users.full_user_name	Format - last name, first name Leave it blank for exams that get cancelled before being performed
ADMISSION_NO	activity_info.pt_adm_no visit.pt_adm_no	
ADMISSION_DTIME	activity_info.pt_adm_dtime visit.pt_adm_dtime	Format: YYYY-MM-DD HH:MM:SS
DISCHARGE_DTIME	activity_info.pt_dsch_dtime visit_info.pt_dsch_dtime	Format: YYYY-MM-DD HH:MM:SS Leave it blank for exams that get cancelled before being performed

CANCELLATION_DTIME	activity_info.cncl_dtime visit_activity_info.cncl_dtime	Format: YYYY-MM-DD HH:MM:SS Leave it blank for exams that have not been cancelled
CANCELLED_BY_DETAILS	activity_info.cncl_by_init, users.full_user_name	Format - last name, first name Leave it blank for exams that have not been cancelled
CANCELLATION_REASON	activity_info.cncl_reason visit_activity_info.cncl_reason	Leave it blank for exams that have not been cancelled
OUTSIDE_FILM	activity_info.outside_itn	Allowed values(Y/N) Can this be identified for exams in dbo.visit_activity(cancelled exams)?
Scheduling_Notes_1	activity_info.reason1 + activity_info.reason2 visit_order.reason1 + visit_order.reason2	
Scheduling_Notes_2	activity_info.ord_comments1 + activity_info.ord_comments2 visit_order.ord_comments1 + visit_order.ord_comments2	
Scheduling_Notes_3	activity_info.prc_cmt_1 + activity_info.prc_cmt_2 visit_activity_info.prc_cmt_1 + visit_activity_info.prc_cmt_2	
Scheduling_Notes_4	activity_info.proc_reason visit_activity_info. proc_reason	

Code value for the extract: 'MIGRATED_PROCDATA'

- Result text attachment : For all the results included in the Results extract file, the following fields are to be extracted:

REPORT_READ_DTIME	document_xref.read_dtime	Format: YYYY-MM-DD HH:MM:SS
REPORT_TRANS_DTIME	document_xref.trans_dtime	Format: YYYY-MM-DD HH:MM:SS
REPORT_ADDENDUM_DTIME	document_xref.addendum_dtime	Format: YYYY-MM-DD HH:MM:SS
ADDENDUM_BY_DETAILS	document_xref.addendum_by, name	Format - last name, first name
RESPONSE_DR_DETAILS	document_xref.respons_dr_1, name	Format - last name, first name

Code value for the extract: 'MIGRATED_REPTDATA

Unlike the other attachments (scan, interactive and zSeg), which are extracted as Reference Pointers, Text attachments are to be extracted by inserting the text(data specified in the above mapping) in the Content column of the Attachments extract. Carriage returns to be replaced with'\.br\'

An example has been attached.

RIS_Attachments - Copy.txt

All the above attachments to be provided as follows
Folder Structure details for Attachments:
Root Folder name: Attachments
Child folders: Scan_documents, Interactive_documents, zSeg_documents

- PACS data for bulk extract:
  - Extract all studies that have not been discontinued, with a study date on or before the specified cut-off date, with a non CSni series and with at least 1 visible instance.
  - Extract all series, excluding the CSni series (SOPClassType = 'CSni') and the soft deleted series (NumberOfVissibleInstances = 0).
  - Extract all images, excluding the CSni images and the soft deleted images.
  - Extract procedure data for all studies.

  Apart from the mandatory fields, the following optional fields are to be extracted:
  Study extract (requesting_physician, performing_physician, reason_for_study, status)
  Procedure extract (study_ref, series_ref, rp_code_meaning, rp_code_value)

- Audit counts:
  Audit counts to be provided for the bulk extract as follows

Table	Total no. of records	No. of records extracted	Reasons for exclusion
All processed exams			
All finalised exams			
All confirmed studies			
All signed-off results			
dbo.scan_image			
dbo.user_event_log			
dbo.PStudy			Counts of soft deleted studies Counts of CSni series/objects Counts of discontinued studies/series
dbo.PSERIES			
dbo.PDICOMOBJECT			

The RIS and PACS data will be validated and since the extract filtration date for data in RIS and PACS are disjoint, any study data that falls out of range in either RIS or PACS that needs to be included in the extract will be communicated. An extract with the required data will have to be provided in the same format.

- **Delta extracts –**

  In the lead-up to go-live, **at least** one delta extract will be required, containing

  Exams that have been completed/cancelled (exams from dbo.activity, filtered by proc_dtime)

  Exams that have been cancelled (exams from dbo.visit_activity, filtered by cncl_dtime)

  Results that have been signed-off for the exams already migrated since the initial data extract (cut-off date for bulk extract).

  The final migration delta extract at go-live will include all exams completed/cancelled(exams from dbo.activity and dbo.visit_activity) between the most recent delta extract and the shut-down of the Siemens system and any results signed-off in that period for the exams already migrated.

  The specifications for the delta extracts are exactly the same as the specifications for the bulk extract. The delta extract has an additional requirement of extracting signed-off result data for procedures migrated as part of the previous bulk/delta extract.

- **Non static data(Ordered/Scheduled exams and preliminary reports)** –

  Currently this Data extraction specification is only relevant for Completed/Cancelled exams and signed-off reports. A decision by the business on how to handle exams that have not been completed at the time of go-live, i.e. have been ordered/scheduled but not yet performed, remains to be made. Also, a decision to be made about reports that have been created/transcribed but not yet signed-off.

  The business will also be working on a process to identify/track and migrate any changes to the already migrated exams/results.

  Example: cancellation of completed exams, addendums to signed off reports, any oustside films added with a retrospective proc_dtime, any documents scans or interactive documents added to procedures that have already been migrated, any Studies confirmed in PACS for procedures that have already been migrated.

  The business is yet to finalise ways to track and migrate any updates to the already migrated (assumed to be static) data.

Insurance Analysis~~20170717 Insurance Analysis.docx~~

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\insurance\insurance 20170717.

Overview

This appears to be the reference table for Health Funds. It should be reviewed for currency and accuracy. The one duplicate fund name should be reviewed to determine whether this should be rationalised to a single fund code. None of the fields in this table appear to have any dependences:

- On other fields within the table; nor
- On other tables within the application.

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

Commented [PT(1]: Is this correct or is it just a fixed reference table? To be confirmed.

Detail & Action Items

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.

Field 1 primary key

Field 1 (plan_code) is the primary key.

Spreadsheet Insu_0010_DupPK.xlsx lists duplicate values in this field. The table is empty therefore the field appears to be acceptable.

Field 1: [plan_code]

This field may contain test or otherwise non-real entries. Migration might require that these values be defined and/or corrected. Spreadsheet Insu_0010_List.xlsx lists the values for inspection.

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Action Item 1. The RISPACS team will examine spreadsheet Insu_0010_List.xlsx to vet the records and provide details of any required changes.

Field 2: [plan_name]

This field may contain test or otherwise non-real entries. Migration might require that these values be defined and/or corrected. Spreadsheet Insu_0020_List.xlsx lists the values for inspection. We need an extract with a list of code, plan name and company name together, noting that only two records have a company name, which may not be valid.

Action Item 2. The RISPACS team will examine spreadsheet Insu_0020_List.xlsx to vet the records and provide details of any required changes.

Action Item 3. The RISPACS team will examine spreadsheet Insu_0021_List.xlsx to determine whether the duplicated [plan_name] is valid or not and provide details of any required changes. To be confirmed prior to extract.

Field 3: [company_name]

This field may contain test or otherwise non-real entries. Migration might require that these values be defined and/or corrected. Spreadsheet Insu_0030_List.xlsx lists the values for inspection.

Action Item 4. The RISPACS team will examine spreadsheet Insu_0030_List.xlsx to vet the records to determine whether the limited use of the field is correct and provide details of any required changes.

Field 4: [insur_addr1]

This field may contain test or otherwise non-real entries. Migration might require that these values be defined and/or corrected. Spreadsheet Insu_0040_List.xlsx lists the values for inspection.

Action Item 5. The RISPACS team will examine spreadsheet Insu_0040_List.xlsx to vet the records to determine whether the limited use of the field is correct and provide details of any required changes. It would appear that the few records with Address details contain rubbish. This should be ignored and not migrated.

Field 5: [insur_addr2]

This field may contain test or otherwise non-real entries. Migration might require that these values be defined and/or corrected. Spreadsheet Insu_0050_List.xlsx lists the values for inspection.

Action Item 6. The RISPACS team will examine spreadsheet Insu_0050_List.xlsx to vet the records to determine whether the limited use of the field is correct and provide details of any required changes.

Field 6: [insur_city]

This field may contain test or otherwise non-real entries. Migration might require that these values be defined and/or corrected. Spreadsheet Insu_0060_List.xlsx lists the values for inspection.

Action Item 7. The RISPACS team will examine spreadsheet Insu_0060_List.xlsx to vet the records to determine whether the limited use of the field is correct and provide details of any required changes.

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Field 7: [insur_state]

This field may contain test or otherwise non-real entries. Migration might require that these values be defined and/or corrected. Spreadsheet Insu_0070_List.xlsx lists the values for inspection.

Action Item 8. The RISPACS team will examine spreadsheet Insu_0070_List.xlsx to vet the records to determine whether the limited use of the field is correct and provide details of any required changes.

Field 8: [insur_zip]

This field may contain test or otherwise non-real entries. Migration might require that these values be defined and/or corrected. Spreadsheet Insu_0080_List.xlsx lists the values for inspection.

Action Item 9. The RISPACS team will examine spreadsheet Insu_0080_List.xlsx to vet the records to determine whether the limited use of the field is correct and provide details of any required changes.

Field 9: [insur_phone]

This field may contain test or otherwise non-real entries. Migration might require that these values be defined and/or corrected. Spreadsheet Insu_0090_List.xlsx lists the values for inspection.

Action Item 10. The RISPACS team will examine spreadsheet Insu_0090_List.xlsx to vet the records to determine whether the limited use of the field is correct and provide details of any required changes.

Field 10: [acc_level]

This field may contain test or otherwise non-real entries. Migration might require that these values be defined and/or corrected. Spreadsheet Insu_0100_List.xlsx lists the values for inspection.

Action Item 11. The RISPACS team will examine spreadsheet Insu_0100_List.xlsx to vet the records to determine whether the limited use of the field is correct and provide details of any required changes.

Field 11: [hlth_plan_id]

This field may contain test or otherwise non-real entries. Migration might require that these values be defined and/or corrected. Spreadsheet Insu_0110_List.xlsx lists the values for inspection.

Action Item 12. The RISPACS team will examine spreadsheet Insu_0110_List.xlsx to vet the records to determine whether the lack of use of the field is correct and provide details of any required changes.

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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 aInsu.sql
        Script for analysing table [RISMigration].[dbo].[insurance] 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 Primary Key test'

/**
        Field 1 is 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 Insu_0010_DupPK. '
IF OBJECT_ID('RISMigration.dbo.Insu_0010_DupPK', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Insu_0010_DupPK];

SELECT * INTO [RISMigration].[dbo].[Insu_0010_DupPK]
        FROM
                (SELECT DISTINCT [plan_code], COUNT([plan_code]) AS RecCount
                        FROM [RISSource].[dbo].[insurance]
                        GROUP BY [plan_code]) AS A
        WHERE RecCount > 1


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

PRINT '' PRINT '' PRINT '                                       Field 1 content test'

/**
        Field 1 [plan_code].
        This test lists permutations and counts.
**/

PRINT '' PRINT 'This test lists permutations and counts. Output to Insu_0010_List. '
IF OBJECT_ID('RISMigration.dbo.Insu_0010_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Insu_0010_List];

SELECT * INTO [RISMigration].[dbo].[Insu_0010_List]
        FROM
                (SELECT DISTINCT [plan_code], COUNT([plan_code]) AS RecCount
                        FROM [RISSource].[dbo].[insurance]
                        GROUP BY [plan_code]) AS A


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

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

/**
        Field 2 [plan_name].
        This test lists permutations and counts.
**/
```

Insurance Analysis~~20170717 Insurance Analysis.docx~~

```
PRINT '' PRINT 'This test lists permutations and counts. Output to Insu_0020_List. '
IF OBJECT_ID('RISMigration.dbo.Insu_0020_List', 'U') IS NOT NULL
	DROP TABLE [RISMigration].[dbo].[Insu_0020_List];

SELECT * INTO [RISMigration].[dbo].[Insu_0020_List]
	FROM
		(SELECT DISTINCT [plan_name], COUNT([plan_name]) AS RecCount
			FROM [RISSource].[dbo].[insurance]
			GROUP BY [plan_name]) AS A


PRINT '' PRINT '' PRINT '                                    Field 2 content test 2 duplicate
plan_name'

/**
	Field 2 [plan_name].
	This test lists records where the count of a plan_name exceeds 1 and the associated plan_code.
**/

PRINT '' PRINT 'This test lists permutations and counts. Output to Insu_0021_List. '
IF OBJECT_ID('RISMigration.dbo.Insu_0021_List', 'U') IS NOT NULL
	DROP TABLE [RISMigration].[dbo].[Insu_0021_List];

SELECT * INTO [RISMigration].[dbo].[Insu_0021_List]
	FROM
		(SELECT A.plan_name
			, B.plan_code
			FROM [RISMigration].[dbo].[Insu_0020_List] A
			JOIN [RISMigration].[dbo].[insurance] B
			ON A.[plan_name] = B.[plan_name]
			WHERE [RecCount] >1
			) AS C


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

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

/**
	Field 3 [company_name].
	This test lists permutations and counts.
**/

PRINT '' PRINT 'This test lists permutations and counts. Output to Insu_0030_List. '
IF OBJECT_ID('RISMigration.dbo.Insu_0030_List', 'U') IS NOT NULL
	DROP TABLE [RISMigration].[dbo].[Insu_0030_List];

SELECT * INTO [RISMigration].[dbo].[Insu_0030_List]
	FROM
		(SELECT DISTINCT [company_name], COUNT([company_name]) AS RecCount
			FROM [RISSource].[dbo].[insurance]
			GROUP BY [company_name]) AS A


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

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

/**
	Field 4 [insur_addr1].
	This test lists permutations and counts.
**/

PRINT '' PRINT 'This test lists permutations and counts. Output to Insu_0040_List. '
IF OBJECT_ID('RISMigration.dbo.Insu_0040_List', 'U') IS NOT NULL
	DROP TABLE [RISMigration].[dbo].[Insu_0040_List];

SELECT * INTO [RISMigration].[dbo].[Insu_0040_List]
	FROM
		(SELECT DISTINCT [insur_addr1], COUNT([insur_addr1]) AS RecCount
```

```
                        FROM [RISSource].[dbo].[insurance]
                        GROUP BY [insur_addr1]) AS A

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

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

/**
        Field 5 [insur_addr2].
        This test lists permutations and counts.
**/

PRINT '' PRINT 'This test lists permutations and counts. Output to Insu_0050_List. '
IF OBJECT_ID('RISMigration.dbo.Insu_0050_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Insu_0050_List];

SELECT * INTO [RISMigration].[dbo].[Insu_0050_List]
        FROM
                (SELECT DISTINCT [insur_addr2], COUNT([insur_addr2]) AS RecCount
                        FROM [RISSource].[dbo].[insurance]
                        GROUP BY [insur_addr2]) AS A


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

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

/**
        Field 6 [insur_city].
        This test lists permutations and counts.
**/

PRINT '' PRINT 'This test lists permutations and counts. Output to Insu_0060_List. '
IF OBJECT_ID('RISMigration.dbo.Insu_0060_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Insu_0060_List];

SELECT * INTO [RISMigration].[dbo].[Insu_0060_List]
        FROM
                (SELECT DISTINCT [insur_city], COUNT([insur_city]) AS RecCount
                        FROM [RISSource].[dbo].[insurance]
                        GROUP BY [insur_city]) AS A


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

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

/**
        Field 7 [insur_state].
        This test lists permutations and counts.
**/

PRINT '' PRINT 'This test lists permutations and counts. Output to Insu_0070_List. '
IF OBJECT_ID('RISMigration.dbo.Insu_0070_List', 'U') IS NOT NULL
        DROP TABLE [RISMigration].[dbo].[Insu_0070_List];

SELECT * INTO [RISMigration].[dbo].[Insu_0070_List]
        FROM
                (SELECT DISTINCT [insur_state], COUNT([insur_state]) AS RecCount
                        FROM [RISSource].[dbo].[insurance]
                        GROUP BY [insur_state]) AS A


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

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

/**
        Field 8 [insur_zip].
        This test lists permutations and counts.
```

Insurance Analysis~~20170717 Insurance Analysis.docx~~

```
**/

PRINT '' PRINT 'This test lists permutations and counts. Output to Insu_0080_List. '
IF OBJECT_ID('RISMigration.dbo.Insu_0080_List', 'U') IS NOT NULL
	DROP TABLE [RISMigration].[dbo].[Insu_0080_List];

SELECT * INTO [RISMigration].[dbo].[Insu_0080_List]
	FROM
		(SELECT DISTINCT [insur_zip], COUNT([insur_zip]) AS RecCount
			FROM [RISSource].[dbo].[insurance]
			GROUP BY [insur_zip]) AS A


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

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

/**
	Field 9 [insur_phone].
	This test lists permutations and counts.
**/

PRINT '' PRINT 'This test lists permutations and counts. Output to Insu_0090_List. '
IF OBJECT_ID('RISMigration.dbo.Insu_0090_List', 'U') IS NOT NULL
	DROP TABLE [RISMigration].[dbo].[Insu_0090_List];

SELECT * INTO [RISMigration].[dbo].[Insu_0090_List]
	FROM
		(SELECT DISTINCT [insur_phone], COUNT([insur_phone]) AS RecCount
			FROM [RISSource].[dbo].[insurance]
			GROUP BY [insur_phone]) AS A


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

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

/**
	Field 10 [acc_level].
	This test lists permutations and counts.
**/

PRINT '' PRINT 'This test lists permutations and counts. Output to Insu_0100_List. '
IF OBJECT_ID('RISMigration.dbo.Insu_0100_List', 'U') IS NOT NULL
	DROP TABLE [RISMigration].[dbo].[Insu_0100_List];

SELECT * INTO [RISMigration].[dbo].[Insu_0100_List]
	FROM
		(SELECT DISTINCT [acc_level], COUNT([acc_level]) AS RecCount
			FROM [RISSource].[dbo].[insurance]
			GROUP BY [acc_level]) AS A


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

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

/**
	Field 11 [hlth_plan_id].
	This test lists permutations and counts.
**/

PRINT '' PRINT 'This test lists permutations and counts. Output to Insu_0110_List. '
IF OBJECT_ID('RISMigration.dbo.Insu_0110_List', 'U') IS NOT NULL
	DROP TABLE [RISMigration].[dbo].[Insu_0110_List];

SELECT * INTO [RISMigration].[dbo].[Insu_0110_List]
	FROM
		(SELECT DISTINCT [hlth_plan_id], COUNT([hlth_plan_id]) AS RecCount
			FROM [RISSource].[dbo].[insurance]
			GROUP BY [hlth_plan_id]) AS A
```

Insurance Analysis~~20170717 Insurance Analysis.docx~~

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 Primary Key test

This test should produce zero records. Output to Insu_0010_DupPK.

(0 row(s) affected)

                                Field 1 tests

                                Field 1 content test

This test lists permutations and counts. Output to Insu_0010_List.

(118 row(s) affected)

                                Field 2 tests

                                Field 2 content test

This test lists permutations and counts. Output to Insu_0020_List.

(117 row(s) affected)

                                Field 2 content test 2 duplicate plan_name

This test lists permutations and counts. Output to Insu_0021_List.

(2 row(s) affected)

                                Field 3 tests

                                Field 3 content test

This test lists permutations and counts. Output to Insu_0030_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(3 row(s) affected)

                                Field 4 tests

                                Field 4 content test

This test lists permutations and counts. Output to Insu_0040_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(3 row(s) affected)

                                Field 5 tests

                                Field 5 content test

This test lists permutations and counts. Output to Insu_0050_List.
Warning: Null value is eliminated by an aggregate or other SET operation.
```

Insurance Analysis~~20170717 Insurance Analysis.docx~~

(2 row(s) affected)

Field 6 tests

Field 6 content test

This test lists permutations and counts. Output to Insu_0060_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(3 row(s) affected)

Field 7 tests

Field 7 content test

This test lists permutations and counts. Output to Insu_0070_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(2 row(s) affected)

Field 8 tests

Field 8 content test

This test lists permutations and counts. Output to Insu_0080_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(3 row(s) affected)

Field 9 tests

Field 9 content test

This test lists permutations and counts. Output to Insu_0090_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(3 row(s) affected)

Field 10 tests

Field 10 content test

This test lists permutations and counts. Output to Insu_0100_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(2 row(s) affected)

Field 11 tests

Field 11 content test

This test lists permutations and counts. Output to Insu_0110_List.
Warning: Null value is eliminated by an aggregate or other SET operation.

(1 row(s) affected)

Migration process

Contents

Migration process

Purpose

This document contains a series of snippets of information related to the data migration. Much of this document should be read in association with "Figure 1: Flowchart~~Figure 1: Flowchart~~" on page 6.

Note – this document is based on limited information in that information about the data format requirements of the new RIS and the new environments for excluded data is not yet available. Hence that part of the process has not been developed.

Migration overview

Data cleansing is generally a process that loops until all problems are resolved. The loops generate initial and subsequently additional fixes for appending to a record of changes. The fixes must be approved by the relevant business area.

Testing shall produce lists records that appear to require resolution. The testing will be examining the data to check:

- Data plausibility against expectations based on the purpose of the application;
- Data for consistency with current needs under criteria such as age and function; and
- Data integrity against relational database standards as applied to the application schema.

Records identified by the migration team that are of concern shall be communicated to the relevant business area for a decision. The business area shall provide a response detailing the action to be taken (if any). The response for a given table might be:

- Lists (list of records and the action to be taken);
- Criteria (criteria and supporting material for coding and the action to be taken); or
- Both of the above.

The resolution might be:

- Delete the data;
- Migrate the data elsewhere (e.g. an new application or storage environment); or
- Fix the data by changing values.

The resolutions shall be executed by taking a copy of the source data into a working area called Stage 1 and making the changes to that copy. Changes shall be in the order:

- Delete (remover the record from "Stage 1~~Stage 1~~" and record the fact in the audit/log in "Stage 5");
- Migrate elsewhere (copy the record to "Stage 3" and record the fact in the audit/log in "Stage 5") – NOTE – some records/tables that are migrated elsewhere might need to be retained in "Stage 1~~Stage 1~~" for further processing in "Stage 1~~Stage 1~~" or even migration to the new application;
- Edit (make the relevant change to the record in "Stage 1~~Stage 1~~" and record the fact in the audit/log in "Stage 5").

Given there are risks that the changes will raise other issues the data in "Stage 1~~Stage 1~~" will be rechecked against all tests. Initial checks are likely to exhaust other issues therefore subsequent checks are more likely to be focussed on "data integrity against relational database standards as applied to the application schema", however integrity checks might also trigger revision of earlier

decisions about data. The data set in "Stage 1~~Stage 1~~" shall therefore be regenerated each time a change is made to the material provided by the business, and will progressively approach the state of ideal data for the migration.

All changes to data (including deletion) to this point shall be logged in audit/log tables.

Once the data in "Stage 1~~Stage 1~~" is clear of issues then:

- The data in "Stage 1~~Stage 1~~" that is to be migrated to the new applications will be transformed as required and stored in suitable tables in "Stage 2";
- Data that is in "Stage 3" shall be transformed as required (e.g. de-normalised) and stored in suitable tables in "Stage 4".

Recording of transformation in audit/log tables may be required. This will be determined when the nature of the transformation is understood.

The testing

All testing shall be executed on a copy of the data in "Stage 1~~Stage 1~~". This facilitates retesting of data post the application of current changes.

The data of concern for each table shall be conveyed to the relevant business area either in the form of a copy of the records (or relevant fields) that includes the index field(s) or as a description of those records (e.g. summarised data that conveys the issue).

Testing shall include:

- Vetting of all fields within each record for consistency within the field;
- Vetting of all fields across each record for consistency within the record;
- Vetting of all relationships for consistency between the tables for issues such as referential integrity.

The changes

The resolution for each table shall be conveyed to the migration team either in the form of:

- The criteria that identifies the records (e.g. field name and range of values and the changes to be performed); or
- A list comprising the index field(s) and the changes to be performed (some tables apparently don't have unique indexes so an artificial key might have to be created).

Given resolution of some issues might generate problematic data (generally in related tables) then it might be necessary to execute multiple iterations of this process on some tables.

The resolution for each table shall be incorporated in the processing by the migration team as appropriate. All iterations of changes for each table shall be combined into a single set of changes; however the identity of the iteration will be retained in the combined set for inclusion in the audit/log.

The processing

The migration environment shall maintain a pristine copy of the source data for refreshing the migration process at the start of each test cycle

The migration development process shall:

1. Generate an empty copy of the audit tables in "Stage 3";

Migration process

2. Generate an empty copy of the audit tables (see section Audit/log table form) in "Stage 5";
3. Copy the pristine version of the relevant tables into "Stage 1~~Stage 1~~";
4. Extract records that are to be migrated elsewhere to "Stage 3" and record the event in the relevant audit/log;
5. Delete records that are to be deleted from "Stage 1~~Stage 1~~" and record the event in the relevant audit/log;
6. Edit records that are to be edited in "Stage 1" and record the event in the relevant audit/log;
7. Test the relevant data tables to identify problematic records for resolution by the relevant business area;
8. Retesting and convey outstanding issues for resolution and restart at step 1 when revised changes have been incorporated in the "Lists/criteria & action" set;
9. Once the data is clean then transform the "Stage 1~~Stage 1~~" records into the required format and store in "Stage 2";
10. Transform the "Stage 3" records into the required format and store in "Stage 4".

List/criteria & actions

As stated earlier, the fix shall be specified either as a list of record or a set of criteria to identify records. They shall either be provided by or compiled from information provided by the business.

Fixes in the form of lists shall be applied to the data in the form of tables specifying the unique index necessary to uniquely identify the record and the individual MigrateStatus, Fix Cycle and MigrateReason values.

Fixes in the form of criteria shall be applied to the data in the form of SQL code specifying the filter necessary to identify the records (filed names and values/ranges) and the MigrateStatus, Fix Cycle and MigrateReason values to be applied to all matching records.

In both instances, where this is "Edit" then the statement must include the field name and the new value of that field. The data type of the field to be changed will have to be considered in the execution of said change.

Editing of records might apply to multiple fields. It is unlikely that this will occur for a significant number of fields however consideration might be needed to change this process in the event we have any records requiring extreme levels of changes.

Format for list/criteria

	Delete	Elsewhere	Edit
List	Index values for deleting	Index values for moving	Index values for editing
	"MigrateStatus" = "Delete"	"MigrateStatus" = "Elsewhere"	"MigrateStatus" = "Edit"
	"Fix Cycle" = next cycle number	"Fix Cycle" = next cycle number	"Fix Cycle" = next cycle number
	"MigrateReason" = business-provided text	"MigrateReason" = business-provided text	"MigrateReason" = business-provided text
			"FieldName" = field to be changed
			"FieldVal" = value to be inserted in field, content consistent with field constraints in the source database
Criteria	Criteria for deleting	Criteria for moving	Criteria for editing
	"MigrateStatus" = "Delete"	"MigrateStatus" = "Elsewhere"	"MigrateStatus" = "Edit"
	"Fix Cycle" = next cycle number	"Fix Cycle" = next cycle number	"Fix Cycle" = next cycle number
	"MigrateReason" = business-provided text	"MigrateReason" = business-provided text	"MigrateReason" = business-provided text
			"FieldName" = field to be changed
			"FieldVal" = value to be inserted in field, content consistent with field constraints in the source database

Migration process

Audit/log table form

The audit table for each source table shall be stored in "Stage 5" and shall contain all the data fields of the original table plus the action fields. For records that are edited there will be an audit/log entry containing the field values before the change and an entry containing the field values after the change.

Beyond the data fields of the original table there will be the fields:

- A field named MigrateStatus (text 10 characters) which can have the values "Elsewhere", "Delete", "Before" and "After";
- A field named Fix Cycle (integer); and
- A field named MigrateReason (text 50 characters) for free-form text explaining the action.

These tables can be fed back to the business to inform them of the details of the changes and for sign-off after the migration.

Migration order

The RISPACS is of significant importance to the operation of TCH and Calvary 24/7. As such down-time must be minimised and so the transition from the current RISPAC to the new RISPAC must be managed so as to minimise the impact to the operation of TCH and Calvary.

Given the volume of data involved and the lack of information related to the speed of processing the migration (possibly both network and server/host issues) it is difficult to determine what level of management might be needed beyond observing referential integrity (if needed). Having said that, some assumptions can be made. They include:

- Lookup tables generally won't vary during the production migration process so they can be pre-populated.
- Assuming that the new RISPAC enforces referential integrity in the database then lookup tables must be migrated first so as to facilitate entries in the dependent tables. Where there are dependencies between lookup tables those dependencies must be accommodated in the sequence of migration.
- Lookup tables related to industry-standard matters such as item-codes are likely to be part of the vendor's package. Lookup tables related to customer-specific matters such as hospital names, rooms, equipment, etc. might be part of the initial build. Some or all of these might be in situ prior to the migration.

Some dynamic data tables are large and so might be time-consuming to migrate. The existence of any such time issues will become clear when the details of the hardware/network are known and testing commences. Should time issues occur then data will be prioritised (including managing the referential integrity issues related to delayed data) with urgent data migrated quickly and the data of a lower urgency possibly migrated after go-live.

Where migration of data within tables is to be so managed then priority lists/criteria will be required. The precise mechanism of this managing of migration of data will depend on the need and functionality (if any) available under the vendor's migration tools. This part of the migration process will be able to accommodate any reasonable needs should they not be available under the vendor's migration tools.

Migration process

Flowchart

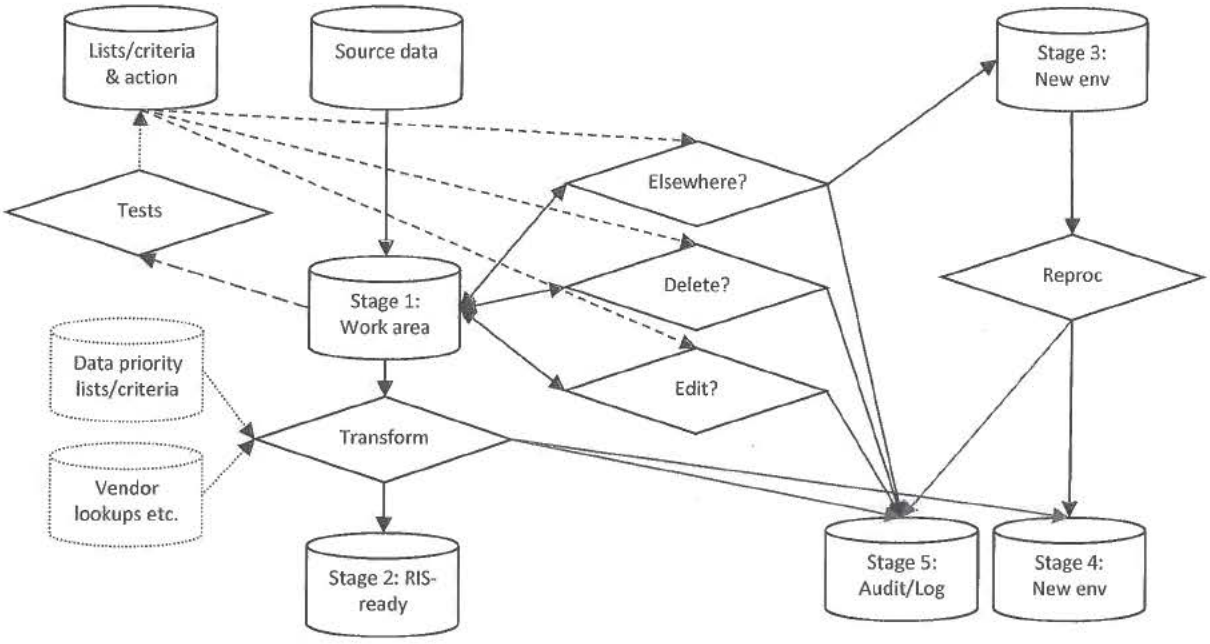

Figure 1: Flowchart

Data priority lists/criteria

The migration process might require some prioritisation of the data transfer beyond the order of the tables. This is the repository for lists/criteria that facilitate ordering the sequence of the data transferred.

Delete

Executes the Lists/criteria & action processes related to deleting records from "Stage 1~~Stage 1~~". Record of the deletions is placed in "Stage 5".

Edit

Executes the Lists/criteria & action processes related to editing records in "Stage 1~~Stage 1~~". Record of the edits ("before" and "after" copies) is placed in "Stage 5".

Elsewhere

Executes the Lists/criteria & action processes related to migrating records from "Stage 1~~Stage 1~~" to other storage environments deleting the records from "Stage 1~~Stage 1~~". Record of the migration is placed in "Stage 5".

Lists/criteria & action

This is the repository for the list/criteria specifying changes that must occur to the data prior to migration (i.e. cleansing).

Reproc

Executes the processes related to transforming records placed temporarily in "Stage 3" to other storage environments. Record of the transformation is placed in "Stage 4".

Migration process

Source data

This is the repository for a copy of the source data from which subsequent runs will be executed. During the development and testing of the migration this repository will store a copy of a recent back-up. During the real migration this repository will store an up-to-date copy of the data.

Stage 1

The migration process is based on taking a full copy of the data then removing anything that will not be migrated to the new RISPAC and correcting any errors. In removing anything that will not be migrated to the new RISPAC, that material which will be migrated elsewhere is extracted and deleted from "Stage 1~~Stage 1~~" whereas the material that won't be migrated elsewhere either is simply deleted from "Stage 1~~Stage 1~~".

This is the repository of the original data that is progressively modified by the various cleaning tools until it is free of errors. Once free of errors the data will then be transformed to the format required of the new RISPAC.

Stage 2

This is the repository of the cleansed copy of "Stage 1~~Stage 1~~" after it is transformed in accordance with the needs of the vendor and the needs of managing the migration process.

Stage 3

This is the repository of the uncleansed data from "Stage 1~~Stage 1~~" that is being migrated elsewhere.

Stage 4

This is the repository of the data from "Stage 3" after any transformation for that migration.

Stage 5

This is the repository of the log of all processing performed on the data in "Stage 1~~Stage 1~~".

Tests

Contains the full suite of tests used to identify problem records. The test is repeated until Lists/criteria & action contains resolution for all problem records

Transform

Contains the processes necessary to transform the cleansed data into the form specified by the vendor. This might require the generation of audit trails and/or material that must be put in a new environment. This will be clarified once the new application is better understood.

Vendor lookups etc.

This is the repository for all vendor-sourced information specifying the transformation process.

Managing change records

Changes to data must be recorded and properly managed so as to facilitate audit and investigate error. To this end all communications must be retained. This includes all outgoing and incoming emails and data sets. Given the magnitude of the overall process and given physical changes relate only to tables (there is impact on the relationships but the actual change is to the tables) then all documentation shall be stored by table (i.e. subdirectory for each table) so as to facilitate understanding by anyone examining the artefacts after the event. Further, given change might

require multiple cycles then the table sub-directory will have a lower level directory for each change cycle. Each change-cycle directory shall have subdirectories for each of the stages of change identified below.

Where the nature of the table or the changes becomes even slightly complex, consideration should also be given to inclusion of a chronological narrative in MS Word stored in the top directory for each table.

To facilitate this, a directory shall be created on the Shared Drive that provides read/write access to select project staff and read-only access to select business staff. Access shall be provided using standard access control processes but under the control of the project.

Given the data being changed might be personal/confidential then all such information shall be stored in a directory for which access is limited to authorised staff. Further, to ensure minimum risk of unauthorised change to the relevant files, write-access will be available only to a small number of project staff.

Where data conveyed is "public" (e.g. lookup tables that do not contain any data connecting them with patients or staff) then any or all of the relevant records may be conveyed without restriction in terms of privacy, however patient-related or staff-related records shall be limited where possible to at-most the index fields for the table or preferably the list of field values that describe the records (e.g. date range).

Authorisation to make changes to the list of authorised staff shall be limited to:

- Program manager (currently Sarah Norton);
- Project manager (currently [redacted]
- SSICT Project Manager (currently Nick Crossley); and
- Data Analyst (currently [redacted]).

Emails copied into the Windows directory structure as .msg files will normally adopt the subject line as the name of the email. This can cause issues where emails share a subject line. Therefore emails copied to the Windows directory structure shall be renamed with the data and time the email was sent (in the form "yymmdd hhmm" (meaning that name-sorts will put the emails in order) preceding the name and the default name suitably revised to reflect the content of the email).

Other files shall also have the date-time in the title – particularly where there might be multiple versions of a given file (e.g. lists).

The stages of change are:

- Test data to identify issues with data;
- Develop solutions with business areas;
- Execute changes specified by business areas;
- Repeat until all issues are resolved.

Test data to identify issues with data (subdirectory "1 – Test")

Testing shall involve SQL code to join and/or summarise data with a view to identifying issues for consideration by the business. The SQL code will generally be in the form of short programs that execute a simple join/test or summary that displays a particular aspect. The code and its output will be stored in documents (Word, Notepad, Excel) suitably named to demonstrate the purpose. Supplementary documents (generally descriptive support) can be included.

Migration process

Develop solutions with business areas (subdirectory "2 - Solve")

The relevant output file and supporting text will be conveyed to the relevant business area. This may be by emailing the relevant output or by allowing the business area to read the file within this workspace.

Where data must be copied elsewhere, the location must be of sufficient security for the data being copied. The acceptability or otherwise of emails for this sensitive data must be determined. Every effort must be made to minimise the risk of personal data escaping.

All outgoing and incoming communications will be stored here. Where discussion/negotiation has occurred all emails will be stored here.

Incoming data (tables listing changes) will also be stored by the table they affect, and where the incoming data is not in itself adequate for migration to the SQL environment then the incoming data will be transformed into an acceptable form.

Execute changes specified by business areas (subdirectory "3 - Apply")

Applying changes shall involve SQL code and possibly tables generated from business input. The changes shall be applied to "Stage 1~~Stage 1~~" as depicted in the flowchart, and the "Stage 3" and "Stage 5" outputs retained. The code and any tables will be stored here.

Repeat until all issues are resolved

The resultant status of "Stage 1~~Stage 1~~" shall then be tested again until all issues are removed or resolved.

Transformation for the new RIS ("Stage 1~~Stage 1~~" to "Stage 2~~Stage 2~~")

The new RIS is likely to store and process data somewhat differently to the current RIS, and so the current data is unlikely to be in a format acceptable to the new RIS.

Once the new RIS is understood and any changes to convert current data to its format have been identified then this part can be updated to reflect that new knowledge. This might involve data going to "Stage 4~~Stage 4~~" and/or "Stage 5~~Stage 5~~". For now, interim repositories have been provided.

The time required to migrate the data to the new RIS is unclear (depends on network speed and server capabilities). Should testing demonstrate that the migration will take longer than it is possible to allow the RIS to be unavailable then migration of large tables will have to be in stages. To this end, for any problematic tables Stage 2 storage will include a field of type Integer that will be set to a value that represents the urgency of the data but will itself not be migrated. The migration process shall migrate data based on the value in that field. The setting entered into that field shall be based on decisions by the business as to data priorities.

Reprocessing for the new environment ("Stage 3~~Stage 3~~" to "Stage 4~~Stage 4~~")

Some data will undoubtedly leave the current RIS. It might be:

- Data that is out of date and so immediate access via the application is no longer required but it must remain available;
- Data that is out of scope for the new application and so must be stored (and processed?) elsewhere;
- Data that is not required and so will be deleted.

Migration process

Once the data that is leaving the application has been identified and any changes to convert current data to its format have been identified then this part can be updated to reflect that new knowledge. This might involve data going to "Stage 5Stage 5". For now, interim repositories have been provided.

Forma

RIS

Initial observations of RIS

The RIS database is somewhat described in document swf_VB20A_Entity_Relationship_Diagrams.pdf (copy at Q:\COMMON\Projects\IM&IT\UCPH Digital Solutions Program\Integrated Diagnostic Imaging Solution\Data Migration\Planning\Emails from Scott\Attachments), however the ERDs appear to be incomplete (ERD at 3.1 states "Overview" and has a table that isn't connected to anything). As such it will be helpful to get an ERD of the current system probably by using Visio to analyse it.

~~I will be getting a copy of Visio hopefully sometime in the week of 8/5/17 so in the meantime I will proceed with the analysis that is possible based on the information currently available.~~

Due to the likely complexity and need for frequent updates the results of this observation will be stored in separate subdirectories for each table/join. Subdirectory names shall reflect the subject. The list below shall be colour-coded to reflect the status of the item.

Analysis of joins depicted in swf_VB20A_Entity_Relationship_Diagrams.pdf

The analysis is being performed under MS Access in Q:\COMMON\Projects\IM&IT\UCPH Digital Solutions Program\Integrated Diagnostic Imaging Solution\Data Migration\Findings\RIS.accdb which is read-only linked to the live data.

These tests inspect for:

- Orphan records (child records where there isn't a corresponding parent record) in query 1 (join showing all children where the parent is null (arrow to parent and parent is null)); and
- Parent records that don't have children where that situation appears unusual (particularly look-up tables) in query 2 (join showing all parents where the child is null (arrow to child and child is null)).

Diagrams analysed:

- 3.1 – this is an overview, and as such is likely to be highly incomplete
- 3.2 – analysed.
- 3.3 – appears to be for reporting operational statistics (table dbo_document appears to contain the build information and table dbo_wp_document contains .rtf format text records back to April 2008). Do we need to keep the historical documents? Do we need to use these build details to engineer replacements?
- 3.4 – Seems to be more of 3.3.
- 3.5 – appears to be an equipment-management environment (event table not used) to record equipment make, model, instance, etc.. See Q 7. Also, regardless of the solution the data must still be analysed.
- 3.6
- 3.7
- 3.8

- 3.9
- 3.10
- 3.11
- 3.12
- 3.13
- 3.14
- 3.15
- 3.16
- 3.17
- 3.18
- 3.19
- 3.20
- 3.21
- 3.22
- 3.23
- 3.24
- 3.25
- 3.26
- 3.27
- 3.28
- 4.1– analysed.

- 4.2
- 4.3
- 4.4
- 4.5
- 4.6
- 4.7
- 4.8
- 4.9

Records highlighted in:

- Red = problem
- Yellow = processing
- Purple = on hold until more is known about the replacement system.
- Green = OK

- Blue = Needs special processing

An 1. Table AuditRecord from Diagram 4.1 table has approximately 2 years of logs – do we need to migrate this?.

An 2. Table avail from Diagram 3.2 join dbo_avail and dbo_borrower – issues

An 3. Table avail from Diagram 3.2 join dbo_avail and dbo_doctor

An 4. Table avail from Diagram 3.2 join dbo_avail and dbo_doctor_entity - OK

An 5. Table BillingAudit from Diagram 4.1 table empty. – OK

An 6. Table BillingPending from Diagram 4.1 table empty. – OK

An 7. Table borr_subtype from Diagram 3.2 join dbo_borr_subtype and dbo_borrower - OK

An 8. Table borrower from Diagram 3.2 join dbo_avail and dbo_borrower - OK

An 9. Table borrower from Diagram 3.2 join dbo_borr_subtype and dbo_borrower - OK

An 10. Table borrower from Diagram 3.2 join dbo_hosp and dbo_borrower - OK

An 11. Table doctor from Diagram 3.2 join dbo_avail and dbo_doctor – OK

An 12. Table doctor from Diagram 3.2 join dbo_ doctor and dbo_ doctor_entity – OK

An 13. Table doctor_entity from Diagram 3.2 join dbo_avail and dbo_doctor_entity - OK

An 14. Table doctor from Diagram 3.2 join dbo_doctor and dbo_doctor_grp_list – OK

An 15. Table doctor_entity from Diagram 3.2 join dbo_ doctor and dbo_ doctor_entity – OK

An 16. Table doctor_entity from Diagram 3.2 join dbo_hosp and dbo_doctor_entity – erroneous records to be excluded from migration – see MR 1.

An 17. Table doctor_grp_hdr from Diagram 3.2 join dbo_doctor_grp_hdr and dbo_doctor_grp_list

An 18. Table doctor_grp_list from Diagram 3.2 join dbo_doctor and dbo_doctor_grp_list – OK

An 19. Table doctor_grp_list from Diagram 3.2 join dbo_doctor_grp_hdr and dbo_doctor_grp_list – OK

An 20. Table hosp from Diagram 3.2 join dbo_hosp and dbo_borrower – OK

An 21. Table hosp from Diagram 3.2 join dbo_hosp and dbo_doctor_entity – OK

An 22. Table PrintingAudit from Diagram 4.1 table has approx 20 days of print history – do we need to migrate this?

An 23. Table wklst from Diagram 3.3 join dbo_ wklst_type and dbo_wklst – OK

An 24. Table wklst_type from Diagram 3.3 join dbo_ wklst_type and dbo_wklst – OK

An 25.

An 26.

Table parent from Diagram 3.2 join dbo_parent and dbo_child

Query parent and child 2 shows no apparent problems

Table child from Diagram 3.2 join dbo_parent and dbo_child

Query parent and child 1 shows no apparent problems

High-level ERD

The main entities in this RIS appear to be:

- Patient (sourced from patient management system)
- Visit
- Doctor
- Image/activity
- Equipment
-

Migration rules

MR 1. From An 16 exclude 208 records in table dbo_doctor_entity where field dbo_doctor_entity.hosp does not appear in dbo_hosp.hosp.

MR 2.

Questions

Q 1. Will the migration occur under SSMS (SQL code, hard to understand and audit, quicker and easier to set up) or SSIS (GUI, easy to understand and audit, time-consuming and more difficult to set up)?

Q 2. Will the data from the current system be retained, and if so then

- In what form;
- What parts of the current system; and
- Is documentation required?

If the current system resides on hardware that will be decommissioned or reassigned then the data can be archived to a Health SQL Server (preferred) or dumped to Excel (not nearly so good particularly if complex reporting might be required).

Q 3. Will the new platform allow access to the underlying tables – say for verifying the migration?

Q 4. What components of the current system will be excluded from the new system, and where will that functionality be put (items of concern include "billing")? If there is any, will it be part of this data migration?

Q 5. The methodology of the cut-over will impact the migration of current data. How will the cut-over occur?

NOTE: Attempting to cover all possible permutations in this document is not plausible. Identifying some basic understanding of the constraints that will exist for the cut-over process will dramatically reduce the number of permutations and hence amount of work in planning the data migration aspects of the cut-over.

INITIAL THOUGHTS

Reference tables can be migrated at virtually any time. Some consideration will be needed regarding keeping both environments up-to-date however this process will not be particularly problematic. Parallel running of reference tables is not likely to be of significant duration (likely duration maximum of a day and probably much less)

RIS/PACS manages the workflow of imaging. Sub-questions include:

- Will historical records be migrated to the new environment (define "historical" – does it include people still being processed under multi-day procedures, people still in the hospital system, etc..);
- Can the cut-over be covered using say a temporary alternative system (e.g. paper)?
- Will there be hardware cut-over issues in the operational areas (e.g. limited space precluding access to both systems, acceptability (or otherwise) of interrogating two systems for a cut-over period)?
-

Plausible solutions might include:

- Migrate all operational data at a particular time (reference tables ahead of time)

Will there be "live" records that must be migrated from one environment to the other (people "falling through the cracks" will be an issue)? Will the two systems run in parallel until those being managed by the old system have been fully processed (what is the likely cycle-time of those people)?

Q 6. swf_VB20A_Entity_Relationship_Diagrams.pdf diagram 3.3 Document Generation shows an automatic report-generating system. Do we need to keep the archive (back to 2008)? Do we need to use this as a source of information for reverse-engineering the reports into the new system?

Q 7. Diagram 3.5 – appears to be an equipment-management environment (event table not used) to record equipment make, model, instance, etc.. Will the new system accommodate that information? If not then what do we do with it? Ask the provider about the new system.

Q 8.

Answered Questions

A 1.

A 2.

A 3.

A 4.

A 5.

Heland, Rebecca (Health)

From: [redacted] <[redacted]>
Sent: Wednesday, 12 December 2018 11:38 PM
To: [redacted] (Health)
Cc: Arsavilli, Dev; [redacted] (Health); [redacted]
Subject: [AUS - ACT] December Delta [SEC=UNCLASSIFIED]

Hi [redacted]

I have imported both sets and executed the validation on the HL7 data.
I'm currently moving the attachments to the AMT server and will start the HL7 migration as soon as that is ready.

The DICOM side will be added to the migration batches ones the HL7 data has been migrated successfully.

Kind Regards,

[redacted]
My timezone is CET
T [redacted]

Unavailable: 30/11 | 17/12 | 22/12 until 02/01/2019

[redacted] NV, [redacted]
http://www.agfahealthcare.com
http://blog.agfahealthcare.com

From: [redacted] (Health) [mailto[redacted]act.gov.au]
Sent: Wednesday 12 December 2018 7:24
To: [redacted] <[redacted]>
Cc: Arsavilli, Dev <Dev.Arsavilli@act.gov.au>; [redacted] (Health) <[redacted]>
<[redacted]>
Subject: December Delta [SEC=UNCLASSIFIED]

Hi [redacted]
The extracts for the December delta are now available at the share location
// Files for AGFA – This folder has all the HL7 and DICOM extract files.
// RIS/attachments – This folder has all the attachments (Scan, idocs and zSeg). The attachments for this delta have been added to the existing folders, which had attachments for the previous round of migration as well.

Also provided are some excel sheets with Patient merge DICOM header update details (I have also included the patientIDs that differ due to leading zeroes, as such records were raised as issues in the previous round of migration) and PACS Exception details.

Thanks,
[redacted]

From: [redacted] (Health)
Sent: Monday, 24 September 2018 6:51 PM
To: [redacted] <[redacted]>

Cc: [redacted] (Health) <[redacted] Arsavilli, Dev <Dev.Arsavilli@act.gov.au>; [redacted]
Subject: RE: ACTPAS/ EDIS configuration into production to start for the data migration for IDIS [SEC=UNCLASSIFIED]

Hi [redacted]
All files are now available at the share location:
// Files for AGFA – This folder has all the HL7 and DICOM extract files. The Image file has been split into smaller yearly files from 2007 to 2018
// RIS/attachments – This folder has all the attachments (Scan, idocs and zSeg)

Also provided are some excel sheets with Patient merge DICOM header update details and PACS Exception details.

Thanks,
[redacted]

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

From: [redacted] [mailto[redacted]
Sent: Monday, 24 September 2018 4:17 PM
To: [redacted] (Health) <[redacted]act.gov.au>
Cc: [redacted] (Health) <[redacted] Arsavilli, Dev <Dev.Arsavilli@act.gov.au>; [redacted]
Subject: RE: ACTPAS/ EDIS configuration into production to start for the data migration for IDIS [SEC=UNCLASSIFIED]

Thx for the update,

This afternoon I'm in training, so it is possible that I have to pick this up tomorrow morning.

Kind Regards,

[redacted]
T [redacted]

[redacted] NV, [redacted]
http://www.agfahealthcare.com
http://blog.agfahealthcare.com

From: [redacted] (Health) [mailto[redacted]act.gov.au]
Sent: Monday 24 September 2018 7:01
To: [redacted]
Cc: [redacted]@agfa.com>; [redacted] (Health) <[redacted] Arsavilli, Dev <Dev.Arsavilli@act.gov.au>; [redacted]
Subject: RE: ACTPAS/ EDIS configuration into production to start for the data migration for IDIS [SEC=UNCLASSIFIED]

Hi [redacted]
In regards to the HL7 and DICOM extracts to be delivered today, they are still being worked on. I am going through my final steps of verifying the data and exporting it to files.
I should be done in a few more hours.
I will keep you informed.
I will let you know when all the files are available.

Thanks,

[redacted]

Sunitha [redacted]
Mobile : [redacted] | Email: [redacted]act.gov.au

From: [redacted] (Health)
Sent: Monday, 17 September 2018 1:57 PM
To: Arsavilli, Dev <Dev.Arsavilli@act.gov.au>; [redacted]
Cc: [redacted] (Health) <[redacted]act.gov.au>; [redacted] McKenzie, Theresa (Health) <Theresa.McKenzie@act.gov.au>; Cowey, Michael <Michael.Cowey@act.gov.au>
Subject: RE: ACTPAS/ EDIS configuration into production to start for the data migration for IDIS [SEC=UNCLASSIFIED]

[redacted]

In regards to the below table, we are waiting on confirmation that the Archived ADT messages were all processed successfully, and that the live feeds from ACTPAS and EDIS are now being processed. We have not yet received any details on that task, including final processing statistics. Could you please follow up on that for us.

dditionally, we will not be able to deliver the RIS and PACS migration files today as scheduled, since Siemens have had problems processing the data at their end. We are expecting now that the earliest possible date for delivery from ACT Health to Agfa will be this Friday 21 September, though it is more likely to be CoB on Monday 24 Sept.

I have updated some of the table dates below to reflect actuals and adjusted expected dates.

Regards
[redacted]

[redacted]
Phone: 02 6174 8768 |Mobile: [redacted] | Email: [redacted]
Future Capability & Governance | Digital Solutions Division | Health Directorate | ACT Government
Level 10, Building 1, TCH, Garran ACT | PO Box 11, Woden ACT 2606 | www.act.gov.au

From: Arsavilli, Dev
Sent: Friday, 31 August 2018 11:08 AM
To: [redacted]
Cc: [redacted] (Health) <[redacted] (Health) <[redacted]act.gov.au>; [redacted] McKenzie, Theresa (Health) <Theresa.McKenzie@act.gov.au>; Cowey, Michael <Michael.Cowey@act.gov.au>
Subject: RE: ACTPAS/ EDIS configuration into production to start for the data migration for IDIS [SEC=UNCLASSIFIED]

Hi [redacted]

Apologies, I thought I sent this out after the meeting but realised that I did not sent it out.

My update to the events as discussed in the meeting 29/08/2018 4:30 – 5:10pm:

#	Task	Start Date	End Date	Resource
1	Archiving of ACTPAS messages	29/08/2018		Michael
2	PMI Data Extraction	29/08/2018	31/09/2018	[redacted]
3	Start ACTPAS interface in IDISP Pre-prod	[redacted] to fill-in		Agfa
4	Agfa Patient Load	04/09/2018	09/09/2018	Agfa
5	Re-play the archived ACTPAS messages	11/09/2018	14/09/2018??	Michael, Agfa
6	Start ACTPAS interface - ACTH	13/09/2018		Michael, Agfa
7	Agfa 20% RIS load	24/09/2018	28/09/2018	Agfa, [redacted]

8	Image Migration of (first two years)	29/09/2018	19/10/2018	Agfa
9	Agfa 80% RIS load	29/09/2018	19/10/2018	Agfa
10	Image Migration of the rest	20/10/2018		Agfa

Please update task 3 and the following dates will depend on that.
I will update the rest in line with the schedule and will distribute another Runsheet.

Kind Regards,

Dev

--

Dev Arsavilli | Project Manager
Phone: 02 6174 8729 | Mobile [redacted] | Email: Dev.Arsavilli@act.gov.au
Future Capability and Governance Branch | Digital Solutions Division | Health Directorate | ACT Government
2-6 Bowes Street, Phillip ACT | GPO Box 825, Canberra ACT 2601 | act.gov.au

From: [redacted] [mailto[redacted]
Sent: Wednesday, 29 August 2018 10:54 AM
To: Cowey, Michael <Michael.Cowey@act.gov.au>; Arsavilli, Dev <Dev.Arsavilli@act.gov.au>
Cc: [redacted] (Health) <[redacted] (Health) <[redacted]act.gov.au>; [redacted] <[redacted]
<[redacted]
Subject: RE: ACTPAS/ EDIS configuration into production to start for the data migration for IDIS [SEC=UNCLASSIFIED]

Hi Dev,
I have added [redacted] and [redacted] to this communication.

Kind Regards,

[redacted]
M [redacted]
daniel[redacted]

Out of office alert:
Friday 10th August
Wednesday 15th August
24th September to 5th October inclusive
5th to 7th November inclusive

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http://blog.agfahealthcare.com

From: Cowey, Michael [mailto:Michael.Cowey@act.gov.au]
Sent: Wednesday, 29 August 2018 10:39 AM
To: Arsavilli, Dev <Dev.Arsavilli@act.gov.au>
Cc: [redacted] <[redacted] (Health) <[redacted] Sampath, [redacted] (Health) <[redacted]act.gov.au>; [redacted] <[redacted]
Subject: RE: ACTPAS/ EDIS configuration into production to start for the data migration for IDIS [SEC=UNCLASSIFIED]

Hi Dev,
The archiving is a standard process that has been in place for years so no issue there. I think you need to swap 4 and 5 over, we need to replay the archived messages first, then connect up the live ACTPAS interface.
Cheers,
Michael

From: Arsavilli, Dev
Sent: Wednesday, 29 August 2018 10:34 AM
To: Cowey, Michael <Michael.Cowey@act.gov.au>
Cc: [redacted] (Health) <[redacted] (Health) <[redacted]act.gov.au>; [redacted] <[redacted]
Subject: RE: ACTPAS/ EDIS configuration into production to start for the data migration for IDIS [SEC=UNCLASSIFIED]

Hi Michael,

We are ready to start the PMI data extract today.
Is the achieving is in place are does it require be manually started?

The events as per the current schedule:

#	Task	Start Date	End Date
1	Achieving of ACTPAS messages	29/08/2018	
2	PMI Data Extraction	29/08/2018	31/09/2018
3	Agfa Patient Load	03/09/2018	07/09/2018
4	Start ACTPAS interface in Pre-prod	10/09/2018	
5	**Re-play the archived ACTPAS messages**	**10/09/2018**	
6	Agfa 20% RIS load	17/09/2018	21/09/2018
7	Image Migration of (first two years)	22/09/2018	12/10/2018
8	Agfa 80% RIS load	22/09/2018	12/10/2018
9	Image Migration of the rest	13/10/2018	

All these activities will be one after the other except for 7 and 8.

[redacted] could you please confirm that item 5 happening after item 4 would not be an issue?

Kind Regards,

Dev

--
Dev Arsavilli | Project Manager
Phone: 02 6174 8729 | Mobile[redacted] | Email: Dev.Arsavilli@act.gov.au
uture Capability and Governance Branch | Digital Solutions Division | Health Directorate | ACT Government
2-6 Bowes Street, Phillip ACT | GPO Box 825, Canberra ACT 2601 | act.gov.au

From: Cook, Sandra (Health)
Sent: Tuesday, 28 August 2018 2:11 PM
To: Cowey, Michael <Michael.Cowey@act.gov.au>
Cc: Arsavilli, Dev <Dev.Arsavilli@act.gov.au>
Subject: ACTPAS/ EDIS configuration into production to start for the data migration for IDIS

Hi Michael,

Would you please activate the ACTPAS integration for IDIS into pre-production required for the data migration work? I have reviewed the processes we are proposing and am happy for this to move into pre-production so we can commence data migration.

Really appreciate it!

Kind Regards,

Sandra Cook | Director Future Capability & Governance
Phone: 02 6205 1451 | Mob.[redacted]

Email: sandra.cook@act.gov.au
Future Capability & Governance | Digital Solutions Division| Health Directorate | ACT Government
Canberra Hospital, Garran ACT | PO Box 11, Woden ACT 2606 | act.gov.au

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Heland, Rebecca (Health)

From: Arsavilli, Dev
Sent: Monday, 10 December 2018 4:56 PM
To: O'Halloran, Peter (Health)
Cc: Cook, Sandra (Health)
Subject: IDIS Exec Management Meeting dot points - 11/12/2018 4:00pm [SEC=UNCLASSIFIED]

Hi Peter,
Good afternoon,

Please see below dot points for the IDIS Exec Management Meeting Tomorrow at 4:00pm.

Agenda Item 3: Minutes and Actions from Previous Meeting:

- All the actions have been closed except for two below relating demonstration of Engage Suite
- The Project SME confirms to me that we do not need a demonstration after the meeting we had with Agfa Global on 26 October 2018
- We need the application to be installed and configured as soon as possible to test
- However, we do not have any update on the actions below:

Action Number	Action Description	Person Responsible	Due Date	Status
20181030-01	[redacted] to discuss with Mark Duggan what he would like to see in an Engage Suite demonstration to allow Agfa to tailor one accordingly. (not completed)	[redacted]		No Update
20181030-04	[redacted] to organise a meeting with Mark Duggan, Jess and the Engage Suite team for next week or the week after, to demonstrate the Engage Suite product and how it meets ACT Health's requirements. (Not completed)	[redacted]		No Update

a) **Engage Suite Progress**

- Engage Suite Infrastructure Variation:
  - Agfa have submitted a change request for Engage Suite on 26 October 2018
  - Agfa global and ACT solution architects discussed this variation on 14 November 2018
    - SSICT architects notified Agfa that a significant component was missed (Xero viewer) by Agfa in the design
  - Agfa reviewed the design and sent it back on 21 November 2018
    - Further clarifications have been closed by 03 December 2018
  - ADRP approved the variation on 4 December 2018
- Server Build:
  - Server Build has been commenced for four servers (Two for TEST and Two for Prod) for a completion by COB Wednesday 12 December 2018
    - Agfa have been notified that the servers will be available from 13 December 2018 for application install
- Data Base Build:
  - Agfa are working on configuring the DB for Engage Suite infrastructure variation and this is required for Application Install
- Application Install:
  - Agfa will be able to install the application after 12 December 2018

  - Last Friday [redacted] informed me that [redacted] (Agfa's onsite resource) will install this application but he will need handover from [redacted] and this will happen sometime during the week beginning 17 December 2018 after [redacted] returns from leave
- Configuration of Engage Suite as per requirements:
  - All the project teams questions have been answered by Agfa Global during the meeting on 26 October 2018
  - The only outstanding action from the meeting is a clarification on 'Copy to Doctor' details in ORM messages. I reminded [redacted] recently to review the status on this.
- Repeat of Security Vulnerability Testing
  - As soon as the application install is complete we will schedule another PEN test to ensure that all the issues are resolved.

Agenda Item 4: Project Update

- SIT: Project has slipped 4 weeks on the Schedule, unable to start SIT testing as:
  - Agfa have delayed resolution of issues raised in DEV environment as [redacted] took some time to understand the integration and environment
  - Agfa's migration of DEV environment to TEST failed Smoke Test in many aspects
  - Agfa have struggled provide resources to resolve issues in a timely manner
  - Issues are still outstanding and this delay is impacting go-live and the current go-live date is showing in the first week of March 2019.
- Cutover Planning: Project team have developed a good cutover plan which was accepted by all stakeholder groups and the plan was endorsed by Project Control Working Group (PCWG) on 27 November 2018
- Data Migration: Migrated 4.5 years' worth of images to Pre-prod environment.
  - Siemens PACS system crashed several times in the past month and for that reason the image migration has been scaled down to five threads from 15.
  - Image migration has been stopped on several occasions and most weekends
  - With this rate the data migration is expected to complete by end of February 2019.

Agenda Item 5: Other Business

- SIT Testing Delays:
  - Would like to know on how Agfa will help the project progress with defect resolutions
- Agfa resourcing until project completion:
  - As [redacted] seems to be a key resource for Agfa and with the knowledge that he will be away all of January 2019, how would Agfa teams support for the project activates?
- IDIS go-live and schedule concerns:
  - All the contingency in the project schedule had been taken up by these delays, each day delay to SIT is adding a day to the go-live currently
- Issue: **Completed External Reports not triggering from IDIS to downstream systems**
  - As part of testing the project team found out that reports that are received from an external agency (for example Everlight) upon completion, they are not being triggered to other systems (for example Clinical Portal, PBRC (billing) and CRIS)
  - However, reports completed in IDIS are automatically triggering as expected
  - On average TCH and Calvary send up to 200 reports to Everlight oh a working day
  - Manual triggering is possibility but this is not an option
  - Agfa have repeatedly indicated that there is no resolution to this issue and suggested that it is general application behaviour and no solution possible
    - Recent PCWG meeting (27 November 2018) clarified to Agfa that this issue will be a blocker for go-live
    - In the same meeting Agfa have asked us to show related requirements to investigate further
    - I collated all the requirements and forwarded them to [redacted] on 30 November 2018
  - There is no update from Agfa on this yet .

Kind Regards,

Dev

Dev Arsavilli | Senior Project Manager
Phone: 02 5124 8729 | Mobile [redacted] | Email: Dev.Arsavilli@act.gov.au
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Heland, Rebecca (Health)

From: O'Halloran, Peter (Health)
Sent: Monday, 3 December 2018 7:59 AM
To: [redacted]
Subject: FW: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]
Attachments: FW: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]

Importance: High

Good morning [redacted]

I would appreciate your assistance in tasking [redacted] to resolve the outstanding issues (detailed below) today which are preventing us from completing testing. I note that we are two weeks behind in testing and I believe that we have provided sometime ago, the information that [redacted] and [redacted] indicated was missing. I understand that [redacted] was tasked to another site for much of last week, however it would be ideal if he could be tasked to us today.

Kind regards

Peter

Peter O'Halloran MACS Snr CP JP | Chief Information Officer
Direct Phone: 02 5124 9000 | Direct Email: Peter.OHalloran@act.gov.au
Digital Solutions Division | ACT Health Directorate | ACT Government
24/7 User Support: 02 5124 5000 | Email: Digital.Support@act.gov.au | healthhub.act.gov.au/technology
Level 2, 4 Bowes Street, Phillip ACT | GPO Box 825, Canberra City ACT 2601 | health.act.gov.au
Executive Assistant - Jamie Isaacson 02 5124 9000 or HealthCIO@act.gov.au

From: Cook, Sandra (Health)
Sent: Friday, 30 November 2018 2:34 PM
To: O'Halloran, Peter (Health) <Peter.O'Halloran@act.gov.au>
Cc: Arsavilli, Dev <Dev.Arsavilli@act.gov.au>
Subject: FW: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]

Hi Peter,

As discussed we have been trying to get the SIT environment rectified so that we can get moving on our integration testing but we are still experiencing challenges.

Dev has been liaising with [redacted] to get this working.

The issues with the environment seems to be around the Agfa configuration for their Rhapsody interfaces and around the status messages in Enterprise Imaging.

Agfa Dev and Agfa Test seem to be different and we haven't been able to progress any further.

We are now 2 weeks behind our current schedule. We now have no contingency left in the schedule so we need urgent attention on this to be able to stay on track.

Kind Regards,

Sandra Cook | Director Future Capability and Governance
Direct Phone: 02 5124 9129 | **Mob.** [redacted] **Direct Email:** sandra.cook@act.gov.au
Future Capability & Governance | Digital Solutions Division | ACT Health Directorate | ACT Government
24/7 User Support: 02 5124 5000 | Email: Digital.Support@act.gov.au | healthhub.act.gov.au/technology

Level 2, 4 Bowes Street, Phillip ACT | GPO Box 825, Canberra City ACT 2601 | health.act.gov.au

From: [redacted] <[redacted]>
Sent: Thursday, 29 November 2018 9:49 PM
To: Cook, Sandra (Health) <Sandra.Cook@act.gov.au>
Cc: [redacted] <[redacted]> Arsavilli, Dev <Dev.Arsavilli@act.gov.au>
Subject: RE: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]

Hi Sandra

I will have to get [redacted] to respond. The email trail would indicate [redacted] was waiting for additional feedback from Dev.

Assuming Dev has provided a response via email as indicated can I ask this be forwarded to be please. Thank you

Kind Regards,

[redacted]
T +61 3 9756 4624| F +61 2 9647 2742 | M [redacted]

Leave Alert:

17- 23 December 2018

[redacted] Australia Pty Ltd. 20 Shand Street Stafford QLD 4053
http://www.agfahealthcare.com
http://blog.agfahealthcare.com

From: Cook, Sandra (Health) [mailto:Sandra.Cook@act.gov.au]
Sent: Thursday, 29 November 2018 4:36 PM
To: [redacted] <[redacted]>
Subject: FW: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]
Importance: High

Hi [redacted]

We have still been unable to commence our SIT testing today. It would be great if someone could urgently look at this problem for us so we can get moving on our testing. I believe we think the issue is in the Agfa Rhapsody configuration and we have also seen a little bit of a disconnect between Enterprise Imaging and Scheduling, as per the attached email.

Kind Regards,

Sandra Cook | Director Future Capability and Governance
Direct Phone: 02 5124 9129 **| Mob.** [redacted] **Direct Email:** sandra.cook@act.gov.au
Future Capability & Governance | Digital Solutions Division | ACT Health Directorate | ACT Government
24/7 User Support: 02 5124 5000 | Email: Digital.Support@act.gov.au | healthhub.act.gov.au/technology
Level 2, 4 Bowes Street, Phillip ACT | GPO Box 825, Canberra City ACT 2601 | health.act.gov.au

From: Arsavilli, Dev
Sent: Thursday, 29 November 2018 4:09 PM
To: Cook, Sandra (Health) <Sandra.Cook@act.gov.au>
Subject: Re: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]

Hi Sandra,
I called [redacted] there is no answer.
[redacted] and [redacted] have been copied in every email.

I will try in few minutes again.

Kind Regards,

Dev

On 29 Nov 2018, at 3:36 pm, Cook, Sandra (Health) <Sandra.Cook@act.gov.au> wrote:

> Hi Dev,
>
> Could you please call [redacted] urgently about what we need from Agfa?
>
> Kind Regards,
>
> **Sandra Cook | Director Future Capability and Governance**
> **Direct Phone:** 02 5124 9129 **| Mob.** [redacted] **Direct Email:** sandra.cook@act.gov.au
> **Future Capability & Governance | Digital Solutions Division | ACT Health Directorate | ACT Government**
> **24/7 User Support:** 02 5124 5000 | Email: Digital.Support@act.gov.au | healthhub.act.gov.au/technology
> Level 2, 4 Bowes Street, Phillip ACT | GPO Box 825, Canberra City ACT 2601 | health.act.gov.au
>
> **From:** [redacted] <[redacted]
> **Sent:** Thursday, 29 November 2018 3:35 PM
> **To:** Cook, Sandra (Health) <Sandra.Cook@act.gov.au>
> **Cc:** [redacted] <[redacted] Arsavilli, Dev <Dev.Arsavilli@act.gov.au>
> **Subject:** FW: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]
>
> Hi Sandra,
> Understood. The first e-mail does not indicate an issue to me?
> Waiting on further advice from ACT team re second e-mail as to whether or not this is indeed an issue for AGFA to resolve. Dev, Let me know specifically on any issues that you are waiting on the AGFA team to investigate.
>
> Kind Regards,
>
> [redacted]
> M [redacted]
> daniel [redacted]
>
> **Out of office alert:**
> **Friday 23rd November 2018**
> **24th December 2018 to 2nd January 2019 inclusive**
>
> http://www.agfahealthcare.com
> http://blog.agfahealthcare.com
>
> **From:** Cook, Sandra (Health) [mailto:Sandra.Cook@act.gov.au]
> **Sent:** Thursday, 29 November 2018 1:02 PM
> **To:** [redacted] <[redacted]
> **Subject:** FW: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]
>
> Hi [redacted]
>
> Seems we still have issues – I am in meetings until 4pm today now – is there anyway someone could look at this for us please?
>
> Kind Regards,

Sandra Cook | Director Future Capability and Governance
Direct Phone: 02 5124 9129 | **Mob.** [redacted] **Direct Email:** sandra.cook@act.gov.au
Future Capability & Governance | Digital Solutions Division | ACT Health Directorate | ACT Government
24/7 User Support: 02 5124 5000 | Email: Digital.Support@act.gov.au | healthhub.act.gov.au/technology
Level 2, 4 Bowes Street, Phillip ACT | GPO Box 825, Canberra City ACT 2601 | health.act.gov.au

From: Arsavilli, Dev
Sent: Thursday, 29 November 2018 1:49 PM
To: Cook, Sandra (Health) <Sandra.Cook@act.gov.au>
Subject: RE: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]

Hi Sandra,
[redacted] sent us a message this morning suggesting us to start testing but the initial tests have failed (same issue with HelthLink/PBRC and Orders).
Certain messages from IDIS are not going to Rhapsody.
I am waiting for Jess to counter check this but [redacted] suggested that he will not be available to look at anything this afternoon.

Kind Regards,

Dev

Dev Arsavilli | Senior Project Manager
Phone: 02 5124 8729 | Mobile [redacted] | Email: Dev.Arsavilli@act.gov.au
IDIS Project | Future Capability & Governance | Digital Solutions Division | ACT Health Directorate | ACT Government
24/7 User Support: 02 5124 5000 | Email: Digital.Support@act.gov.au | healthhub.act.gov.au/technology
Level 10, Building 1, Canberra Hospital, Garran ACT | GPO Box 825, Canberra City ACT 2601 | health.act.gov.au

From: Cook, Sandra (Health)
Sent: Thursday, 29 November 2018 1:37 PM
To: Arsavilli, Dev <Dev.Arsavilli@act.gov.au>
Subject: RE: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]
Importance: High

Hi Dev,

[redacted] has reported that [redacted] has done some further work on config for our SIT environment – has that fixed the issues?

Kind Regards,

Sandra Cook | Director Future Capability and Governance
Direct Phone: 02 5124 9129 | **Mob.** [redacted] **Direct Email:** sandra.cook@act.gov.au
Future Capability & Governance | Digital Solutions Division | ACT Health Directorate | ACT Government
24/7 User Support: 02 5124 5000 | Email: Digital.Support@act.gov.au | healthhub.act.gov.au/technology
Level 2, 4 Bowes Street, Phillip ACT | GPO Box 825, Canberra City ACT 2601 | health.act.gov.au

From: Arsavilli, Dev
Sent: Thursday, 29 November 2018 9:34 AM
To: Cook, Sandra (Health) <Sandra.Cook@act.gov.au>
Subject: FW: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]

Hi Sandra,
Yesterday we had some issues with SIT.

- [redacted] has investigated most day yesterday and was asking us to retest number of times

Somehow the integration configuration of DEV and TEST on Agfa side aren't the same.

- Before starting SIT Agfa have confirmed that they have copied all the configuration and defect resolutions across to TEST

Today in the Integration Meeting [redacted] and [redacted] notified me that [redacted] has limited availability for today.
I informed [redacted] that we have already delayed for more than 2 weeks now and on our end costs are increasing as we are all waiting for a working environment for SIT.

We need [redacted] to resolve this issue if not we will not be able to progress further.

Could you please escalate this with [redacted] please?

Kind Regards,

Dev

Dev Arsavilli | Senior Project Manager
Phone: 02 5124 8729 | Mobile [redacted] | Email: Dev.Arsavilli@act.gov.au
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Level 10, Building 1, Canberra Hospital, Garran ACT | GPO Box 825, Canberra City ACT 2601 | health.act.gov.au

From: [redacted] [mailto[redacted]com.au]
Sent: Wednesday, 28 November 2018 5:32 PM
To: Arsavilli, Dev <Dev.Arsavilli@act.gov.au>
Cc: Sheik, Rabbani <Rabbani.Sheik@act.gov.au>; Cowey, Michael <Michael.Cowey@act.gov.au>; [redacted] <[redacted] <[redacted] Griffiths, Jessica (Health) <Jessica.Griffiths@act.gov.au>; [redacted] (Health) <[redacted] Integration Support (Health) <Integration.Support@act.gov.au>; [redacted] Du Toit <[redacted] Subramaiah, Arvin <Arvin.Subramaiah@act.gov.au>; [redacted] <[redacted]
Subject: RE: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]

Hi Dev,

There are some major difference between the messages AGFA is sending out in the TEST-1 environment, compared to the TEST-2(DEV) environment.

I have attached a sample from each environment.

At a quick glance The below two items would a major problem for getting the orders status values to update in eOrders:

- ORC-2 does not contain the complete eOrders reference number
- ORC-4 is empty

Kind regards,

[redacted]
Level 10 9 Yarra Street
SOUTH YARRA VIC 3141 AUSTRALIA
P: +61 3 8060 6177 | M: +[redacted] | E:[redacted]com.au

Please note my working days are Tuesday,Wednesday and Thursday

mkmhealth.com.au | LinkedIn | Twitter

From: Arsavilli, Dev <Dev.Arsavilli@act.gov.au>
Sent: 28 November 2018 17:10
To: [redacted] <[redacted]com.au>
Cc: Sheik, Rabbani <Rabbani.Sheik@act.gov.au>; Cowey, Michael <Michael.Cowey@act.gov.au>; [redacted] <[redacted] Griffiths, Jessica (Health) <Jessica.Griffiths@act.gov.au>; [redacted] (Health) <[redacted] Integration Support (Health) <Integration.Support@act.gov.au>; [redacted] <[redacted] Subramaiah, Arvin <Arvin.Subramaiah@act.gov.au>
Subject: RE: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]

Hi Sarah,

Apologies, I should have included you in this discussion in the morning.

Today we are trying to start our SIT testing but we had few issues in the morning. Agfa have resolved several but we are stuck with this issue at this stage.
When we do direct orders all seems good but when we place orders in eOrders we see the status as "placing" even after we see a positive acknowledgement from IDIS.

Please see the attached and guide us?
The connection is from TEST1 (Clinical Portal/Rhapsody) to Agfa TEST (SIT) environment.

Kind Regards,

Dev

Dev Arsavilli | Senior Project Manager
Phone: 02 5124 8729 | Mobile [redacted] | Email: Dev.Arsavilli@act.gov.au
IDIS Project | Future Capability & Governance | Digital Solutions Division | ACT Health Directorate | ACT Government
24/7 User Support: 02 5124 5000 | Email: Digital.Support@act.gov.au | healthhub.act.gov.au/technology
Level 10, Building 1, Canberra Hospital, Garran ACT | GPO Box 825, Canberra City ACT 2601 | health.act.gov.au

From: [redacted] [mailto:[redacted]
Sent: Wednesday, 28 November 2018 4:20 PM
To: Arsavilli, Dev <Dev.Arsavilli@act.gov.au>; Subramaiah, Arvin <Arvin.Subramaiah@act.gov.au>
Cc: Sheik, Rabbani <Rabbani.Sheik@act.gov.au>; Cowey, Michael <Michael.Cowey@act.gov.au>; [redacted] <[redacted] Griffiths, Jessica (Health) <Jessica.Griffiths@act.gov.au>; [redacted] (Health) <[redacted] Integration Support (Health) <Integration.Support@act.gov.au>
Subject: RE: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]

Hi Dev,

Could you please have another placed in Eorders? Issue should now be resolved.

Kind Regards,

[redacted]
M [redacted]

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http://blog.agfahealthcare.com

From: Arsavilli, Dev [mailto:Dev.Arsavilli@act.gov.au]
Sent: Wednesday, 28 November 2018 1:54 PM
To: [redacted] Subramaiah, Arvin <Arvin.Subramaiah@act.gov.au>
Cc: Sheik, Rabbani <Rabbani.Sheik@act.gov.au>; Cowey, Michael <Michael.Cowey@act.gov.au>; [redacted] Griffiths, Jessica (Health) <Jessica.Griffiths@act.gov.au>; [redacted] (Health) <[redacted] Integration Support (Health) <Integration.Support@act.gov.au>
Subject: RE: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]

Hi [redacted]

Please have a look at the attached.
I believe direct orders (IDIS to eOrders) are working, but the **orders placed on our eOrders are not appearing in IDIS.**

Kind Regards,

Dev

Dev Arsavilli | Senior Project Manager
Phone: 02 5124 8729 | Mobile [redacted] | Email: Dev.Arsavilli@act.gov.au
IDIS Project | Future Capability & Governance | Digital Solutions Division | ACT Health Directorate | ACT Government
24/7 User Support: 02 5124 5000 | Email: Digital.Support@act.gov.au | healthhub.act.gov.au/technology
Level 10, Building 1, Canberra Hospital, Garran ACT | GPO Box 825, Canberra City ACT 2601 | health.act.gov.au

From: [redacted] [mailto:[redacted]
Sent: Wednesday, 28 November 2018 2:34 PM
To: Subramaiah, Arvin <Arvin.Subramaiah@act.gov.au>; Arsavilli, Dev <Dev.Arsavilli@act.gov.au>
Cc: Sheik, Rabbani <Rabbani.Sheik@act.gov.au>; Cowey, Michael <Michael.Cowey@act.gov.au>; [redacted] Griffiths, Jessica (Health) <Jessica.Griffiths@act.gov.au>; [redacted] (Health) <[redacted] Integration Support (Health) <Integration.Support@act.gov.au>
Subject: RE: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]

Hi Arvin,

Thanks, I checked.. all appears in order now. I have also created a new direct order from IDIS and could see the inbound from eorders being processed.

@Arsavilli, Dev : Could you please ask someone to place an order in eorders?

Kind Regards,

[redacted]
M [redacted]

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From: Subramaiah, Arvin [mailto:Arvin.Subramaiah@act.gov.au]
Sent: Wednesday, 28 November 2018 1:19 PM
To: [redacted] Arsavilli, Dev <Dev.Arsavilli@act.gov.au>

Cc: Sheik, Rabbani <Rabbani.Sheik@act.gov.au>; Cowey, Michael <Michael.Cowey@act.gov.au>; [redacted] Griffiths, Jessica (Health) <Jessica.Griffiths@act.gov.au>; [redacted] (Health) <[redacted] Integration Support (Health) <Integration.Support@act.gov.au>
Subject: RE: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]

Hi [redacted]

It's updated, can you please check now?

Thanks,
Arvin

From: [redacted] [mailto[redacted]
Sent: Wednesday, 28 November 2018 2:08 PM
To: Arsavilli, Dev <Dev.Arsavilli@act.gov.au>
Cc: Sheik, Rabbani <Rabbani.Sheik@act.gov.au>; Cowey, Michael <Michael.Cowey@act.gov.au>; [redacted] Griffiths, Jessica (Health) <Jessica.Griffiths@act.gov.au>; [redacted] (Health) <[redacted] Subramaiah, Arvin <Arvin.Subramaiah@act.gov.au>; Integration Support (Health) <Integration.Support@act.gov.au>
Subject: RE: IDIS Integration and Clinical Portal package install [SEC=UNCLASSIFIED]

Hi Dev,

Could you please ask someone to check if the acthtstrhapsody.test.act.gov.au:2251 comms point is active and listening?
I tested the direct order workflow from IDIS, which generated the message below and it is currently queued for delivery to the ACT test Rhapsody.
It does appear as if a connection timeout could be the cause of the issue. Already restarted the comms point on my side.

MSH|^~\\&|IDIS_ORDER|ACTGOV|XXXX|XXXX|20181128132832||ORM^O01^ORM_O01|19010|P|2.4|||||8859/1\r
PID||000380|000380^^^PAS^MR|[redacted]||[redacted]
PV1||O|||||||||||||||A1|AHEI_47680^^^AHEI\r
ORC|NW||868^TCH-MI||SC||^^^20181128132200^^A||20181128132248|QUADRAT|[redacted]|||||||||0^ORDERED^QPORDER\r
OBR|||868^TCH-MI|XRCALCANEUM^Lower Extrem- Calcaneum [XR]^QPLANNER|A|20181128132200|20181128132200|||||bbb||^^^^LEFT|[redacted]||868|||868||||O||^^^20181128132200^^A||||||||20181128132200\r
ZDS|1.3.51.0.1.1.20181128132825.868.3916^AGFA^Application^DICOM\r

Kind Regards,

[redacted]
M [redacted]

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http://blog.agfahealthcare.com

From: Arsavilli, Dev [mailto:Dev.Arsavilli@act.gov.au]
Sent: Wednesday, 28 November 2018 11:36 AM