

# SQA Metric Items From FPA Spreadsheet - May 2018

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## Abstract

Evaluation of various potential metrics, performance indicators from the Excel workbook that Software Quality Assurance collected called First Pass Acceptance. This will only be run for the month of January 2018. <sup>1</sup>

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<sup>1</sup>Date Ran: Monday 4<sup>th</sup> June, 2018 at 13:38

# 1 Introduction

The data is processed using R<sup>2</sup>, Version 3.4.4 named “Some to Lean On”. The only extension (package or library) utilized is lubridate (version 1.7.1) to provide key functionality in the processing of dates.

The data is read into R from a comma seperated value (csv) file which is derived (saved) from the spreadsheet without modification. Additional values are computed as needed.

This report is prepared in the R enviroment using a collection of packages know as Sweave that included knitr which in turn feeds the package into L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> a typesetting program to produce a PDF file. L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> is implmented in MiT<sub>E</sub>X. L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> is utilizing the folowing packages to control style and formating:

- datetime and
- multitoc

This will only show a point in time summary and no trends.

# 2 Data and Calculations

## 2.1 Data

A sepearate data dictionary will be prepared to for both the source data and computed values stored in R.

## 2.2 Calculations

All calculations presented here have not been implemented in R as formulas.

# 3 Work Yet to be Completed

## 3.1 Formula

Some calculations would be better implemented as formulas. The calculations need to be evulated and the formulas developed where needed.

## 3.2 Trending

Eventually the “System” will be updated to select the data on a for a calander month. After processing the resulots will be stored in a seperate file. This will allow for longer term trending of this data.

### 3.2.1 Graphs

When “trending” is implmented graphs of the trends will also be added.

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<sup>2</sup>RStudio is utilized as an IDE

## 4 Quantity Metrics

### 4.1 Application supported

This is a list of all application support this period.

**Note:** Alphabetize the list

[1]	"TestComplete"	"IRIS"
[3]	"Pulse"	"DFCS"
[5]	"CMSNext"	"SAS"
[7]	"Knowledge Management"	"Groninger"
[9]	"TrendReader"	"DARA Filler DHM and RU"
[11]	"GS Reports"	"GDSN/GS1"
[13]	"CMSnext"	"Alinity S Non-LIMS spreadsheets"
[15]	"WWLIMS"	"BioCommand Batch Control Plus"

### 4.2 Number of Projects

The total number of projects worked on in this period. This may differ from the application list because some applications may have more than one project in the period.

[1] 26

### 4.3 Number of Reviews

This is the number of items reviewed, a document will be counted more than once if it is reviewed more than once.

[1] 270

### 4.4 Number of Items Reviewed

This is the number of unique items reviewed, each item is only counted once regardless of how many times it is reviewed.

**Note:** This is reporting low due to certain items having no way to discriminate between such as multiple executions of the same test script or results from an IIVP run on different computers within the same project.

[1] 210

### 4.5 Number of Projects Started

The point at which a project is started is when version 1 of the *Software Change Request* is approved.

**Note:** This now counts ML type projects (Metrics Library and GS Reports) using the Project Plan as the point that a project starts.

[1] 6

## 4.6 Projects Completed

The point at which a project is considered completed is when version 1 of the *System Certification Summary* is approved.

**Note:** now counts GS (Global Service) Reports Move to Production as the end of project.

[1] 8

## 4.7 Number Of Deliverables by Type

This is unique for each deliverable. It only counts each document once so a deliverable that is disapproved and then approved is only counted once.

		Cancellation
	0	0
CII		Decommissioning Report
5		0
Design Documentation		Design Verification
1		4
ERES		FRS
1		9
IDP		IIVP
6		11
IIVP results		ISSD
13		1
Maintenance Plan		Move to Production
0		1
Other		Project Plan
0		5
Release Notes		Risk Assessment
3		0
Software Change Request	Software Compliance Assessment	
6		5
System Certification Summary		Test Protocol
9		57
Test Protocol Results		Traceability
50		10
URS		URS/FRS
5		0
User Acceptance Protocol	User Acceptance Protocol results	
4		3
Validation Plan		
1		

## 4.8 Number of Deliverable by Application

This is the number of unique deliverables that each application submitted. It only counts each document once, regardless of the status.

	Abbott Transfusion Medicine	
0		0
AFMS Alinity S Non-LIMS spreadsheets		
0		1
Alinity Source Verifier		AMM
0		0
Apollo/PHM	Assay File Database	
0		0
BioCommand Batch Control Plus		CMSnext
1		1
CMSNext	DARA Filler DHM and RU	
56		3
DaVinci		DFCS
0		34
DPW		EDMS
0		0
eNovator	EP Evaluator	
0		0
GDSN/GS1	Groninger	
3		4
GS Reports	ideaPoint	
3		0
IRIS	Knowledge Management	
17		47
Metrics Library	Navigator	
0		0
PCN/SCN	PEAR	
0		0
Power BI	Print on Demand	
0		0
Pulse	QIMS	
18		0
Reliasoft Xfmea	SAS	
0		8
TestComplete	TODS	
1		0
TrendReader	WWLIMS	
2		11

#### 4.9 Number of Approvals, Disapprovals, and First Pass Approvals

	A	A-FP	D
0	73	127	70

#### 4.10 Table of Deliverables by Application

	Cancellation	CII	Decommissioning	Report
	0	0	0	0
Abbott Transfusion Medicine	0	0	0	0
AFMS	0	0	0	0
Alinity S Non-LIMS spreadsheets	0	0	0	0
Alinity Source Verifier	0	0	0	0
AMM	0	0	0	0
Apollo/PHM	0	0	0	0
Assay File Database	0	0	0	0
BioCommand Batch Control Plus	0	0	0	0
CMSnext	0	0	0	0
CMSNext	0	0	2	0
DARA Filler DHM and RU	0	0	0	0
DaVinci	0	0	0	0
DFCS	0	0	1	0
DPW	0	0	0	0
EDMS	0	0	0	0
eNovator	0	0	0	0
EP Evaluator	0	0	0	0
GDSN/GS1	0	0	0	0
Groninger	0	0	0	0
GS Reports	0	0	0	0
ideaPoint	0	0	0	0
IRIS	0	0	0	0
Knowledge Management	0	0	0	0
Metrics Library	0	0	0	0
Navigator	0	0	0	0
PCN/SCN	0	0	0	0
PEAR	0	0	0	0
Power BI	0	0	0	0
Print on Demand	0	0	0	0
Pulse	0	0	2	0
QIMS	0	0	0	0
Reliasoft Xfmea	0	0	0	0
SAS	0	0	0	0
TestComplete	0	0	0	0
TODS	0	0	0	0
TrendReader	0	0	0	0

WVLIMS	0	0	0	0
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	Design Documentation	Design Verification	ERES
	0	0	0
Abbott Transfusion Medicine	0	0	0
AFMS	0	0	0
Alinity S Non-LIMS spreadsheets	0	0	0
Alinity Source Verifier	0	0	0
AMM	0	0	0
Apollo/PHM	0	0	0
Assay File Database	0	0	0
BioCommand Batch Control Plus	0	0	0
CMSnext	0	0	0
CMSNext	0	0	0
DARA Filler DHM and RU	1	0	0
DaVinci	0	0	0
DFCS	0	1	0
DPW	0	0	0
EDMS	0	0	0
eNovator	0	0	0
EP Evaluator	0	0	0
GDSN/GS1	0	0	0
Groninger	0	0	0
GS Reports	0	0	0
ideaPoint	0	0	0
IRIS	0	0	0
Knowledge Management	0	1	0
Metrics Library	0	0	0
Navigator	0	0	0
PCN/SCN	0	0	0
PEAR	0	0	0
Power BI	0	0	0
Print on Demand	0	0	0
Pulse	0	2	0
QIMS	0	0	0
Reliasoft Xfmea	0	0	0
SAS	0	0	0
TestComplete	0	0	0
TODS	0	0	0
TrendReader	0	0	0
WVLIMS	0	0	1

	FRS	IDP	IIVP	IIVP results	ISSD
	0	0	0	0	0
Abbott Transfusion Medicine	0	0	0	0	0
AFMS	0	0	0	0	0

Alinity S Non-LIMS spreadsheets	0	0	0	0	0
Alinity Source Verifier	0	0	0	0	0
AMM	0	0	0	0	0
Apollo/PHM	0	0	0	0	0
Assay File Database	0	0	0	0	0
BioCommand Batch Control Plus	0	0	0	1	0
CMSnext	0	0	0	0	0
CMSNext	4	1	2	3	0
DARA Filler DHM and RU	1	0	0	0	0
DaVinci	0	0	0	0	0
DFCS	0	1	1	2	0
DPW	0	0	0	0	0
EDMS	0	0	0	0	0
eNovator	0	0	0	0	0
EP Evaluator	0	0	0	0	0
GDSN/GS1	0	0	0	0	0
Groninger	0	0	0	2	0
GS Reports	0	0	0	0	0
ideaPoint	0	0	0	0	0
IRIS	0	3	0	0	0
Knowledge Management	1	1	2	3	1
Metrics Library	0	0	0	0	0
Navigator	0	0	0	0	0
PCN/SCN	0	0	0	0	0
PEAR	0	0	0	0	0
Power BI	0	0	0	0	0
Print on Demand	0	0	0	0	0
Pulse	1	0	1	2	0
QIMS	0	0	0	0	0
Reliasoft Xfmea	0	0	0	0	0
SAS	0	0	0	0	0
TestComplete	0	0	0	0	0
TODS	0	0	0	0	0
TrendReader	0	0	0	0	0
WVLIMS	2	0	5	0	0

	Maintenance	Plan	Move to Production	Other
		0		0
Abbott Transfusion Medicine		0		0
AFMS		0		0
Alinity S Non-LIMS spreadsheets		0		0
Alinity Source Verifier		0		0
AMM		0		0
Apollo/PHM		0		0
Assay File Database		0		0
BioCommand Batch Control Plus		0		0



CMSnext	0	0	0
CMSNext	0	0	0
DARA Filler DHM and RU	0	0	0
DaVinci	0	0	0
DFCS	0	0	0
DPW	0	0	0
EDMS	0	0	0
eNovator	0	0	0
EP Evaluator	0	0	0
GDSN/GS1	0	0	0
Groninger	0	0	0
GS Reports	0	1	0
ideaPoint	0	0	0
IRIS	0	0	0
Knowledge Management	0	0	0
Metrics Library	0	0	0
Navigator	0	0	0
PCN/SCN	0	0	0
PEAR	0	0	0
Power BI	0	0	0
Print on Demand	0	0	0
Pulse	0	0	0
QIMS	0	0	0
Reliasoft Xfmea	0	0	0
SAS	0	0	0
TestComplete	0	0	0
TODS	0	0	0
TrendReader	0	0	0
WVLIMS	0	0	0

	Project	Plan	Release	Notes	Risk	Assessment
		0		0		0
Abbott Transfusion Medicine		0		0		0
AFMS		0		0		0
Alinity S Non-LIMS spreadsheets		0		0		0
Alinity Source Verifier		0		0		0
AMM		0		0		0
Apollo/PHM		0		0		0
Assay File Database		0		0		0
BioCommand Batch Control Plus		0		0		0
CMSnext		0		0		0
CMSNext		0		0		0
DARA Filler DHM and RU		0		0		0
DaVinci		0		0		0
DFCS		1		1		0
DPW		0		0		0

EDMS	0	0	0
eNovator	0	0	0
EP Evaluator	0	0	0
GDSN/GS1	2	0	0
Groninger	0	0	0
GS Reports	2	0	0
ideaPoint	0	0	0
IRIS	0	0	0
Knowledge Management	0	1	0
Metrics Library	0	0	0
Navigator	0	0	0
PCN/SCN	0	0	0
PEAR	0	0	0
Power BI	0	0	0
Print on Demand	0	0	0
Pulse	0	0	0
QIMS	0	0	0
Reliasoft Xfmea	0	0	0
SAS	0	0	0
TestComplete	0	0	0
TODS	0	0	0
TrendReader	0	1	0
WVLIMS	0	0	0

#### Software Change Request

	0
Abbott Transfusion Medicine	0
AFMS	0
Alinity S Non-LIMS spreadsheets	0
Alinity Source Verifier	0
AMM	0
Apollo/PHM	0
Assay File Database	0
BioCommand Batch Control Plus	0
CMSnext	0
CMSNext	1
DARA Filler DHM and RU	0
DaVinci	0
DFCS	1
DPW	0
EDMS	0
eNovator	0
EP Evaluator	0
GDSN/GS1	0
Groninger	0
GS Reports	0

ideaPoint	0
IRIS	0
Knowledge Management	1
Metrics Library	0
Navigator	0
PCN/SCN	0
PEAR	0
Power BI	0
Print on Demand	0
Pulse	1
QIMS	0
Reliasoft Xfmea	0
SAS	1
TestComplete	0
TODS	0
TrendReader	0
WVLIMS	1

#### Software Compliance Assessment

	0
Abbott Transfusion Medicine	0
AFMS	0
Alinity S Non-LIMS spreadsheets	1
Alinity Source Verifier	0
AMM	0
Apollo/PHM	0
Assay File Database	0
BioCommand Batch Control Plus	0
CMSnext	0
CMSNext	0
DARA Filler DHM and RU	0
DaVinci	0
DFCS	1
DPW	0
EDMS	0
eNovator	0
EP Evaluator	0
GDSN/GS1	0
Groninger	0
GS Reports	0
ideaPoint	0
IRIS	0
Knowledge Management	0
Metrics Library	0
Navigator	0
PCN/SCN	0

PEAR	0
Power BI	0
Print on Demand	0
Pulse	1
QIMS	0
Reliasoft Xfmea	0
SAS	0
TestComplete	1
TODS	0
TrendReader	0
WVLIMS	1

System Certification Summary	Test Protocol
	0
Abbott Transfusion Medicine	0
AFMS	0
Alinity S Non-LIMS spreadsheets	0
Alinity Source Verifier	0
AMM	0
Apollo/PHM	0
Assay File Database	0
BioCommand Batch Control Plus	0
CMSnext	1
CMSNext	29
DARA Filler DHM and RU	0
DaVinci	0
DFCS	4
DPW	0
EDMS	0
eNovator	0
EP Evaluator	0
GDSN/GS1	0
Groninger	1
GS Reports	0
ideaPoint	0
IRIS	2
Knowledge Management	13
Metrics Library	0
Navigator	0
PCN/SCN	0
PEAR	0
Power BI	0
Print on Demand	0
Pulse	5
QIMS	0
Reliasoft Xfmea	0

SAS	1	4
TestComplete	0	0
TODS	0	0
TrendReader	0	0
WVLIMS	0	0

	Test Protocol Results	Traceability	URS
	0	0	0
Abbott Transfusion Medicine	0	0	0
AFMS	0	0	0
Alinity S Non-LIMS spreadsheets	0	0	0
Alinity Source Verifier	0	0	0
AMM	0	0	0
Apollo/PHM	0	0	0
Assay File Database	0	0	0
BioCommand Batch Control Plus	0	0	0
CMSnext	0	0	0
CMSNext	12	1	1
DARA Filler DHM and RU	0	0	1
DaVinci	0	0	0
DFCS	4	4	1
DPW	0	0	0
EDMS	0	0	0
eNovator	0	0	0
EP Evaluator	0	0	0
GDSN/GS1	0	0	1
Groninger	0	1	0
GS Reports	0	0	0
ideaPoint	0	0	0
IRIS	10	2	0
Knowledge Management	20	1	1
Metrics Library	0	0	0
Navigator	0	0	0
PCN/SCN	0	0	0
PEAR	0	0	0
Power BI	0	0	0
Print on Demand	0	0	0
Pulse	2	0	0
QIMS	0	0	0
Reliasoft Xfmea	0	0	0
SAS	2	0	0
TestComplete	0	0	0
TODS	0	0	0
TrendReader	0	1	0
WVLIMS	0	0	0

	URS/FRS	User Acceptance Protocol
	0	0
Abbott Transfusion Medicine	0	0
AFMS	0	0
Alinity S Non-LIMS spreadsheets	0	0
Alinity Source Verifier	0	0
AMM	0	0
Apollo/PHM	0	0
Assay File Database	0	0
BioCommand Batch Control Plus	0	0
CMSnext	0	0
CMSNext	0	0
DARA Filler DHM and RU	0	0
DaVinci	0	0
DFCS	0	4
DPW	0	0
EDMS	0	0
eNovator	0	0
EP Evaluator	0	0
GDSN/GS1	0	0
Groninger	0	0
GS Reports	0	0
ideaPoint	0	0
IRIS	0	0
Knowledge Management	0	0
Metrics Library	0	0
Navigator	0	0
PCN/SCN	0	0
PEAR	0	0
Power BI	0	0
Print on Demand	0	0
Pulse	0	0
QIMS	0	0
Reliasoft Xfmea	0	0
SAS	0	0
TestComplete	0	0
TODS	0	0
TrendReader	0	0
WWLIMS	0	0

	User Acceptance Protocol results
	0
Abbott Transfusion Medicine	0
AFMS	0
Alinity S Non-LIMS spreadsheets	0
Alinity Source Verifier	0

AMM	0
Apollo/PHM	0
Assay File Database	0
BioCommand Batch Control Plus	0
CMSnext	0
CMSNext	0
DARA Filler DHM and RU	0
DaVinci	0
DFCS	3
DPW	0
EDMS	0
eNovator	0
EP Evaluator	0
GDSN/GS1	0
Groninger	0
GS Reports	0
ideaPoint	0
IRIS	0
Knowledge Management	0
Metrics Library	0
Navigator	0
PCN/SCN	0
PEAR	0
Power BI	0
Print on Demand	0
Pulse	0
QIMS	0
Reliasoft Xfmea	0
SAS	0
TestComplete	0
TODS	0
TrendReader	0
WVLIMS	0

#### Validation Plan

	0
Abbott Transfusion Medicine	0
AFMS	0
Alinity S Non-LIMS spreadsheets	0
Alinity Source Verifier	0
AMM	0
Apollo/PHM	0
Assay File Database	0
BioCommand Batch Control Plus	0
CMSnext	0
CMSNext	0

DARA Filler DHM and RU	0
DaVinci	0
DFCS	0
DPW	0
EDMS	0
eNovator	0
EP Evaluator	0
GDSN/GS1	0
Groninger	0
GS Reports	0
ideaPoint	0
IRIS	0
Knowledge Management	0
Metrics Library	0
Navigator	0
PCN/SCN	0
PEAR	0
Power BI	0
Print on Demand	0
Pulse	0
QIMS	0
Reliasoft Xfmea	0
SAS	0
TestComplete	0
TODS	0
TrendReader	0
WWLIMS	1

#### 4.11 Table of Rejection Reasons

Inaccurate information	Incorrect scope
33	2
Insufficient testing	Insufficient traceability
3	1
N/A	Not compliant with procedure
2	9
Not following configuration management	Not following document version control
1	2
Not using template	Other
0	15
Requirement deficiency	
1	



## 4.12 Defects Verses Application

	Inaccurate information	Incorrect scope
CMSNext	10	2
DARA Filler DHM and RU	1	0
DFCS	6	0
Groninger	1	0
IRIS	2	0
Knowledge Management	7	0
Pulse	4	0
SAS	1	0
WWLIMS	1	0

	Insufficient testing	Insufficient traceability	N/A
CMSNext	3	0	0
DARA Filler DHM and RU	0	0	0
DFCS	0	1	0
Groninger	0	0	0
IRIS	0	0	0
Knowledge Management	0	0	2
Pulse	0	0	0
SAS	0	0	0
WWLIMS	0	0	0

	Not compliant with procedure
CMSNext	7
DARA Filler DHM and RU	0
DFCS	0
Groninger	1
IRIS	0
Knowledge Management	1
Pulse	0
SAS	0
WWLIMS	0

	Not following configuration management
CMSNext	1
DARA Filler DHM and RU	0
DFCS	0
Groninger	0
IRIS	0
Knowledge Management	0
Pulse	0
SAS	0
WWLIMS	0

	Not following document version control
CMSNext	2
DARA Filler DHM and RU	0
DFCS	0
Groninger	0
IRIS	0
Knowledge Management	0
Pulse	0
SAS	0
WWLIMS	0

	Not using template	Other Requirement deficiency
CMSNext	0	7
DARA Filler DHM and RU	0	0
DFCS	0	1
Groninger	0	0
IRIS	0	4
Knowledge Management	0	3
Pulse	0	0
SAS	0	0
WWLIMS	0	0

#### 4.13 Defects Verses Deliverable

```
> table(as.character(subset(FPA, subset = (status == "D"))$deliverable),
+       subset(FPA, subset = (status == "D"))$reason)
```

	Inaccurate information	Incorrect scope
CII	2	0
Design Verification	2	0
FRS	2	0
IDP	1	0
IIVP	0	1
IIVP results	2	0
ISSD	1	0
Release Notes	1	0
Software Change Request	4	1
System Certification Summary	5	0
Test Protocol	9	0
Test Protocol Results	2	0
Traceability	1	0
URS	1	0

	Insufficient testing	Insufficient traceability
CII	0	0
Design Verification	0	0

FRS	0	0
IDP	0	0
IIVP	0	0
IIVP results	0	0
ISSD	0	0
Release Notes	0	0
Software Change Request	0	0
System Certification Summary	0	0
Test Protocol	3	0
Test Protocol Results	0	1
Traceability	0	0
URS	0	0

N/A Not compliant with procedure

CII	0	0
Design Verification	0	0
FRS	0	1
IDP	0	0
IIVP	0	0
IIVP results	0	4
ISSD	0	0
Release Notes	0	0
Software Change Request	0	0
System Certification Summary	2	0
Test Protocol	0	0
Test Protocol Results	0	4
Traceability	0	0
URS	0	0

Not following configuration management

CII	0
Design Verification	0
FRS	0
IDP	0
IIVP	1
IIVP results	0
ISSD	0
Release Notes	0
Software Change Request	0
System Certification Summary	0
Test Protocol	0
Test Protocol Results	0
Traceability	0
URS	0

Not following document version control

CII	1
Design Verification	0
FRS	1
IDP	0
IIVP	0
IIVP results	0
ISSD	0
Release Notes	0
Software Change Request	0
System Certification Summary	0
Test Protocol	0
Test Protocol Results	0
Traceability	0
URS	0

	Not using template	Other Requirement	deficiency
CII	0	0	0
Design Verification	0	0	0
FRS	0	2	1
IDP	0	0	0
IIVP	0	0	0
IIVP results	0	0	0
ISSD	0	0	0
Release Notes	0	0	0
Software Change Request	0	0	0
System Certification Summary	0	0	0
Test Protocol	0	4	0
Test Protocol Results	0	4	0
Traceability	0	5	0
URS	0	0	0

#### 4.14 Rejection Reason by Deliverable

CII	Design Verification
4	2
FRS	IDP
7	1
IIVP	IIVP results
2	6
ISSD	Release Notes
1	1
Software Change Request	System Certification Summary
5	7
Test Protocol	Test Protocol Results
16	11
Traceability	URS

#### 4.15 Number of Rejections by Project

	CMSNext	DARA	Filler	DHM	and RU		DFCS
	34				1		8
Groninger					IRIS	Knowledge Management	
	2				6		13
Pulse					SAS		WWLIMS
	4				1		1

## 5 Rate Metrics

### 5.1 Document Approval Rate

This is portion of documents that are approved upon review.

It is computed by counting the number of approvals divided that by the total number of reviews.

[1] 0.7333333

### 5.2 First Pass Acceptance

this is the portion of documents that are approved on the first review conducted by SQA.

It is computed by counting the number of first pass approvals divided by the number of reviews.

[1] 0.4703704