

Soft Measures

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What's News in Metrics?

The last year has seen an incredible increase in interest in functional size measurement so we have made it our special feature for this issue.

Need your own personal FPA mentor? Find out how to count like an expert in our article about the new expert system **FP Decision Maker™**.

In 1994 Howard Rubens reported that over 80% of metrics programs ended in failure. Recent reports from the Meta group indicate that this rate of failure has not diminished with time.

This issue's special interest article - *Implementing a Mature FPA Process* is the first in our new series that investigates the resources



FP Decision Maker™

and infrastructure required to establish functional size measurement within your organisation so that it is a mature capable process and is sustainable over the longer term.

In our article on *Managing Change and Controlling Project Scope* we help solve the problem of corrupted FPA data repositories where older

counts overwrite later counts. This typically occurs where Function Points are required to measure multiple change requests within a single software Release. We investigate how counters can size a proposed Change Request individually *and* measure the net size of the release but still be able to withdraw the Change Request from the Release count if it is not approved. How can it be done?



Pam Morris - Editor

Your own FPA Mentor - FP Decision Maker™

Total Metrics have distilled the IFPUG 4.2 Counting Practices Manual's knowledge and rules into a discrete set of carefully constructed questions enabling you to make the correct counting decision every time.

For some time we have taught some of these techniques in our FPA Training but in the interests of 'best practice function

point counting' we have now made this methodology open to everyone. Our **FP Decision Maker™** expert system assists you in answering all your FPA counting queries. It will be available *free* on our WWW site for you to use every time you have a counting query from September 1st 2004.

If you would like to test your Function Point skills against the experts go to:

WWW.Totalmetrics.com and Select **SCOPE Project Sizing Software™** and then **FP Decision Maker™**

As an example of how the CPM's rules can be distilled and summarised see the next article - "All DETs Stand up and be Counted".



All DETs - Stand up and be counted

The IFPUG CPM 4.2 definitions for what is counted as a 'DET' and 'FTR' are described differently for each Type of elementary process.

On investigation our experts found that rules for DETs and FTRs are identical, although expressed differently for Inputs, Outputs and Inquiries. Try it and see. If you like the way it is done you will love the -
FP Decision Maker™

www.totalmetrics.com



IFPUG is holding their annual conference September 19th to 24th 2004 in San Diego, USA

Pam Morris from Total Metrics is presenting the FP 331 FP Counting Validation Training Course

Book now and earn 10 CFPS Extension Credits

Visit: www.ifpug.org

We have distilled the essential elements of what constitutes a valid DET and find that this simple set of rules is valid for all three types of Elementary Processes.

Start by finding the 'candidate' DETs which are any fields that cross the application boundary.

When identifying unique DETs for the elementary process:

1) Review all fields processed by the Elementary Process and select only those fields that cross the boundary (enter the process from the user and/or exit the process to the user).

The 'candidate' DETs selected would:

- **Include** any fields that cross the boundary, such as those that - the user enters via a screen, are entered or read from another application, sent to another application, displayed on a report or screen, read or written to a tape, downloaded from a file etc.
- **Exclude** any fields that are only used internally within the process and do not cross the boundary; such as those fields generated internally and then saved to an ILF or retrieved from an ILF for participation in the processing.

2) From the list of fields identified in step 1, select only those fields that satisfy the definition of a DET as defined in the CPM.

The DETs selected would:

- **Include** all user recognisable variables, as well as messages sent or received, and action and control commands sent or

received, to or from the user.

- **Exclude** any fields that are technical, system generated or literals presented to the user.

3) Remove duplicate DETs from the list to leave only a list of unique DETs.

- If a DET enters and/or exits the boundary multiple times, then these are considered to be duplicates of the same DET. Include this DET in the DET list only once.
- If multiple messages have been identified as DETs, then these are considered to be duplicates of a single message DET irrespective of how many different types of messages enter or exit the boundary. Include only one DET in the list, for the messages.
- If multiple control or action commands have been identified as DETs then these are considered to be duplicates of a single control or action command DET irrespective of how many different types of commands have been identified. Include only one DET in the list, for all control or action commands.

4) To determine the total number of DETs to be counted for the Elementary Process, review the list of unique DETs from step 3, and count one DET for each unique DET in the list.

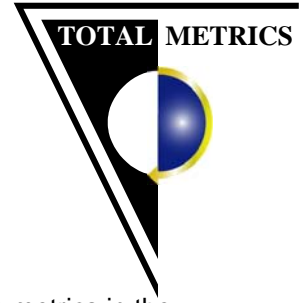
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Implementing a Mature FPA Process

Our previous newsletters have had numerous articles on ways in which Function Point Analysis can be used within an organisation to better manage and control the software production process.

Many of the metrics derived contributed to management decisions, which would have a direct influence on the financial bottom line of the organisation, or contribute to ensuring the organisation meets its contractual obligations.

It is therefore of utmost importance that function point measurement be carried out accurately and repeatably so as to optimise the correct interpretation and application of the result.

Next issue we investigate the documentation standards required to establish a functional size measurement process within your organisation

Introduction

In order to ensure accurate function point results, the measurement process itself needs to be predictable, repeatable and auditable. This series of articles identifies the major aspects of a function point program that need to be established if the program is to be useful and sustainable.

This issue we cover the human aspects of *who* is responsible for *what* in the FPA process. Over the next few issues we will:

- identify criteria for determining what you need to count to satisfy your metrics reporting requirements
- look at what types of standards you need in place for recording counts, resolving issues and validating your FPA counts
- identify the key components needed in a functional specification so you can successfully count
- investigate the resources and costs for implementing a successful program.

Roles And Responsibilities For Function Point Collection Analysis And Use

Organisations need to establish clearly the roles and responsibilities of all the key participants in the function point counting process. Diagram1 (refer page 4) defines the functional size metrics process and its key interfaces within an organisation's IT Personnel.

IT Management

The IT Management should:

- nominate criteria for projects to be selected for sizing
- nominate key size metrics for regular reporting for their departmental area

- use size metrics in the development and review of their process improvement strategies
- gain a high level understanding of the basic principles of FPA.

Business End Users (Clients)

Should supply:

- the signed-off the Requirements Specification documents
- application knowledge of functional user requirements.

Project Managers

Should supply:

- appropriate documentation, such as the Functional Specifications, at appropriate project milestones in order for the Functional Sizing activities to proceed.

Design Team

Should supply:

- Technical Specification documentation at appropriate project milestones in order for the Function Point count to proceed.

Function Point Team

Should schedule counters to:

- become proficient in the use of the FPA recording and reporting tools
- perform function point counting at scheduled project milestones
- act as administrator for the database where function point counts are stored
- perform function point counting according to the procedures described in their

Continued.....

Implementing a Mature FPA ProcessContinued

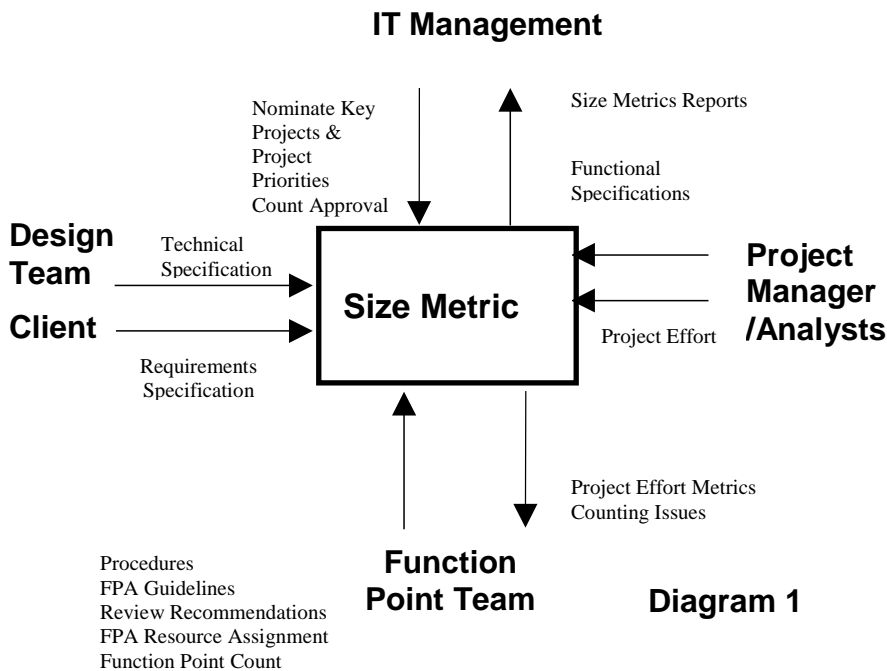


Diagram 1

- FPA procedures manual
- produce the required FPA reports and participate in FPA count reviews
- keep informed of any changes in FPA techniques, rules or principles via IFPUG website
- communicate any changes in FPA counting rules, guidelines or procedures

- to others in the Function Point team
- develop procedures, guidelines and standards for the collection, recording and reporting of FPA data
- provide expertise to resolve function point counting issues
- verify counts are being performed as prescribed and sign-off counts when a milestone is completed.

Depending upon the magnitude of the metrics program and direction provided by management, the Function Point Team may also be required to:

- assess function point counting personnel for accreditation as an approved *Function Point Counter* for the organisation
- advise development area managers on the role of functional size in reporting Key Performance Indicators communicate the basic principles, uses and benefits of FPA to clients and management
- advise their IT personnel and clients on the correct use of FPA within their organisation
- provide ongoing assistance to project teams in the support and implementation of the procedures within this manual
- analyse FPA count results for specific projects and across projects.
- use FPA count results to develop specified management reports.

Managing Change and Controlling Project SCOPE – how to do it

Concurrent Function Point Counts

Internal suppliers (IT Development Team) and external suppliers (outsourcers) are frequently required to use function point analysis to measure client Change Requests (CRs) as part of regular project monitoring, to size and control SCOPE creep and in order to determine the impact of the CRs on rework effort and project productivity.

When the Supplier is working on the next Release they are often required to size multiple CRs that arrive on an adhoc basis during the Release planning or during the

actual development. Each CR must be sized individually to evaluate its cost benefits prior to client approval. Often the same function is impacted by several CRs within the one Release.

Tracking these concurrent change requests and keeping the baseline count intact is a nightmare for the function point counters.

If they size each CR individually in a spreadsheet:

- there is no means of easily reporting which functions are impacted by more than one CR.

- if they update the baseline count with a CR that is not subsequently approved, they need to try and 'undo' the changes or go back to an earlier Baseline. However, they often inadvertently 'undo' other counts as well.
- if they take a copy of the baseline to record the planned CRs then when they are approved they then need to re-apply the approved changes to the master baseline count.

Managing Change and Controlling Project SCOPE - continued

All of this creates a huge overhead on the function point counting effort and often results in Baseline counts being 'corrupted' due to a counter failing to put in all the changes or failing to remove them for a CR that was not approved.

Function point counters are not alone in this configuration control and change management issue. A similar situation occurs when multiple editors need to make changes to a Microsoft WORD document. Microsoft introduced the tool option of 'Track Changes' whereby different WORD Users could work on the same document and each person's changes would be recorded with a different colour. Ie, Using the function "Highlight Changes on Screen" allows all changes to show, whereas turning off the Highlight option gives you the "NET" effect as if all changes were accepted. We have long needed a function point counting tool with this feature for recording CRs.

About 12 years ago Function Point

counting repository tools were first released and it was hoped that these tools would be able to address this problem. Ie, allowing concurrent counts on the same baseline and being able to individually size them, modify them, remove them and still keep the integrity of the Baseline.

However up until the release of SCOPE Project Sizing Software™ no function point tool had solved this problem

The new **SCOPE Project Sizing Software™** works in a similar fashion to MS WORD.

It allows a counter to take a copy of a Baseline Count and create a New Release count (ie, equivalent to making a copy of an MS WORD document).

Each different CR is set up as a different *Count Session* (eg, equivalent to a recording a different User in WORD). If the counter selects to open a *Count Session* then all the functions that are impacted by the CR ie, added

new, changed or deleted are highlighted to belong to that *Count Session*. **SCOPE** reports the count *only* for that session.

Just as we can select for 'Highlight Changes on Screen' in MS WORD the counter can view the 'impact' audit trail for any function (process or data group). Eg, if *Create Assignment* was added new to the Release by first Development Count, Changed by CR#001 and deleted from the Release by CR#002.

The session count for each CR counts the *Create Assignment* process (6 function points). If you ask **SCOPE** to report the **NET** count for the Release it reports a zero **NET** result since the *Create Assignment* process was deleted before it was delivered.

If you ask **SCOPE** for the **Rework** count for the Release it reports the *Create Assignment* process as being impacted 3 times (A,C,D) (= 18 fps).

If CR#003 is not approved by the client then the CR#003 *Count Session* is selected to be removed (the equivalent MS WORD function is to 'Reject the changes' for a User). **SCOPE** then deletes the audit trail of the CR#003 count and reports the NET Release size of 6 fps for *Create Assignment* process.

When the Release is delivered by the developers the Counter selects to update the Production Release of the count (equivalent to *Accept all Changes* in WORD) and a new Baseline Count is created with the net results.

Never again have problems managing your count sequences or overwriting changes. Download your evaluation copy of SCOPE Project Sizing Software™ now from www.totalmetrics.com

The screenshot shows the SCOPE Project Sizing Software interface. On the left is a tree view of functions under 'Function - AMS Development Project V 1.0'. The 'Create Assignment' function is selected. The main window displays configuration options for this function, including Name, Description, Process Type (Input selected), Complexity Matrix (DET and FTR settings), Complexity Result Source (Enter Value selected), Multiplier, Function Points, and Session Impact. A table at the bottom shows the session impact for 'Create Assignment'.

| Session | Impact |
|------------------------------------|--------|
| AMS Development Project Count | Add |
| #001 - CR- Daily Rate Impact Count | Change |
| #002 - CR-Delete Assignment Type | Delete |

Audit Trail of different CRs for the Development Count and the impact on the elementary process Create Assignment

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About Our Organization...

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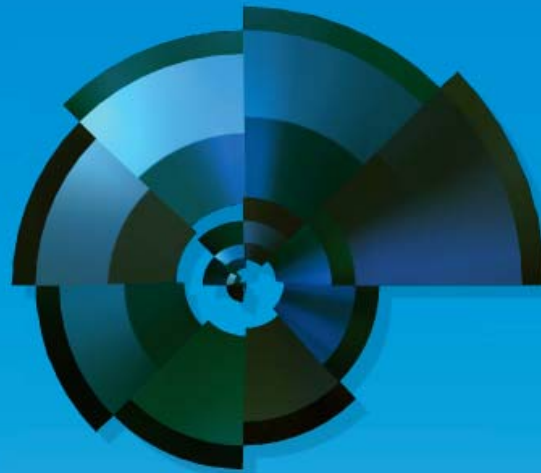
Thoughts for the Month

"Never take life seriously. Nobody gets out alive anyway . "

" The only difference between a rut and a grave is the depth."

"Give a person a fish and you feed them for a day; teach that person to use the Internet and they won't bother you for weeks"

"Why does a slight tax increase cost you two hundred dollars and a substantial tax cut save you thirty cents?"



SCOPE

Project Sizing Software™

"Puts the **FUN** back into **Function** Point Counting"

- Sizes projects using IFPUG function points
- Takes the guesswork out of project estimates
- Quantitatively tracks change requests
- Puts you in control of project scope-creep
- Quantitative asset management of software
- Collects ISBSG project data
- Produces over 35 different Reports



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