Simple Function Point!
A new method for functional size measurement fully compatible with the IFPUG method 4.x

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User domain (human + systems)
FP: Counting sources

User Requirements

Process model

Logical / (physical) flowcharts

Conceptual, logical, (physical) data models

Reports and views

Views

Simple Function Point
Counting process basic steps

1. Identification of the application boundary, goal and scope of counting
2. Data functions and transactions identification
3. Identifying BFC details
4. Measurement adjustment
5. Document Analysis
6. Function list

Functional measurement cycle

Simple Function Point
IFPUG method (process): Pros and Cons

IFPUG method main Pros:
- It is consolidated by a several decades use
- Many benchmarking data are publicly available

IFPUG method main Cons:
- it requires a very high level of details in FURs
- it provides a wealth of rules not always easily applicable
- it does not provide a layered model compatible with recent development architectures based on software components
- it induces uncertainty in the final value of a measurement exercise depending on interpretations of rules (multimedia issue, decoding tables etc.). Values may fluctuate from 5 to 20%
- it is relatively easy to use it for ex novo development projects but difficult to apply to ordinary maintenance, not well documented enhancement projects and for keeping asset management measures always updated.
Counting process basic steps

Identification of the application boundary, goal and scope of counting

>60% of measurement effort and duration

Document Analysis

Function list

Measurement report drafting

Measurement adjustment

Users, Analysts and FP counters

Identification of BFC details

Simple Function Point
Market requires fast, agile, very challenging measurement methods with low impact on production processes, which require not too specialized skills, that are reliable in results, not dependent on counters opinions, technology and related to effort, cost, duration of a software project.

The current FSMMs are only partially compliant with these needs.
DPO, creator of the Early & Quick FP method for IFPUG FP estimation, in late 2010 decided to start a research project to identify an FSM method alternative to IFPUG one, although totally compatible with it, in order to let the organizations saving the full value incorporated in the previous measuring models and services.

On April 2011 the first report of a successful research was published.
Research project goals

Define a new functional measurement consistent with the framework of the ISO 14143 family of standards, totally compatible with the IFPUG when applied on the same object of measurement, but......:

1. easier to apply
2. easier to learn
3. less susceptible to different interpretations
4. less susceptible to "manipulation" of measurements
5. designed to allow an easier update of existing measurement assets
6. designed to allow an immediate conversion of existing assets counted with the IFPUG method
To obtain an acceptable statistical correlation between effort required to develop or maintain a software application and its functional size is necessary to consider the **numerosity** AND the **internal complexity** of BFCs. In other words we assume that BFC’s complexity is relevant to effort estimation.
A research project managed by DPO at the end of the 2010 has shown that boring with the details of a standard IFPUG count is completely useless! Effort is correlated to the number of elementary processes and logical data groups at the same way as the detailed count.
Studies conducted by DPO on a sample of about 800 projects, extracted by ISBSG databases, counted with the IFPUG method have shown that this assumption, at least in the context of this methodology, is not true. It's true, instead, the following statement:

The accuracy of a model of correlation between actual effort and the software functional size does not decrease when considering only the number of BFC in each of the two classes (data or transaction).
Yes! but using only the number of BFCs as a unit of measurement (i.e. every BFC = 1 UFP) we have not a measure which is numerically equivalent to IFPUG. We do have a similar correlation in terms of accuracy effort/size but with a different PDR ratio.

We needed a further step in research: to find some BFC definitions and individual weights in order to have the same numerical value if both the methods (IFPUG FP and the new one) are applied to the same software application.
Simple FP are based only on two BFCs and we called them:

- Unspecified Generic Elementary Process (UGEP)
- Unspecified Generic Data Group (UGDG)

The values associated with each Simple FP BFC are:

- UGEP = 4.6 SiFP
- UGDG = 7.0 SiFP
SiFP Reference Model

User domain (human+systems)
The correlation between effort and SiFP is identical to the one between effort and IFPUG UFP in both the cases of development and enhancement maintenance projects. The two measures can be used interchangeably in the determination of cost models and with the same unit prices of the market.
The correlation between the two cost models (one based on IFPUG FP and the other based on SiFP) is impressive! The two logarithmic models are related to each other as \( y = 0.9915x + 0.0476 \) with correlation coefficient \( R^2 = 0.9777 \). The single minimum difference (in absolute value) is 0\%, the maximum is 37\%, the average is 8\%, the median is 7\%. For about 90\% of the projects the difference is below 17\%. The final difference of a portfolio of cumulative effort values of about 2,437,087 hours is -51,364 hours equal to -2\%. 

\[
y = 0.9915x + 0.0476 \\
R^2 = 0.9777
\]
What are the implications?

This finding makes the whole system of rules aimed at the differentiation between IFPUG EI, EO, EQ, ILF and EIF and at the determination of the complexity of the single BFC (DET, RET, FTR), useless.
SiFP is not an estimation method

- It is a FSMM compliant with ISO 14143 framework
- It has its own (simple and few) rules, reference model and manual
- It is maintained by a specific association
What about the size convertibility?

By replacing the IFPUG method with the SiFP method at the portfolio level (i.e. on a number of initiatives greater than 30-40) any differences are compensated and the specific size evaluations are almost identical.

If we consider the ISBSG data set of circa 800 sample points as a portfolio valued 284’005 UFP the correspondent SiFP value is 282’882 SiFP (absolute difference is 1’123 units equal to <0.4%)
UFP vs SiFP

\[ y = 0,9988x \]
\[ R^2 = 0,9776 \]

\[ \ln(SiFP) \]

Lineare (\ln(SiFP))

Distribuzione variabile In(UFP) standard

Distribuzione variabile In(SiFP) standard

Simple Function Point
Migrating from IFPUG to SiFP

- Totally painless: it arises from the documentation of the actual measure and it is not necessary to return to the user requirements.
- Total recovery of investment in training (who knows IFPUG just needs an update of a couple of hours in distance-learning).
- Recovery of the IFPUG certification that will be migrated on demand after a short refresher course indicated above.
- Considering the equivalence of metrics, contracts drawn using IFPUG FP may be migrated by agreement of the parties.
ISBSG data ready to be used

- ISBSG data sets already contain all the information needed to calculate, for each project, the value of SiFP.
- It is not necessary to start a new collection of data to have a usable benchmarking database: it is already there!
- It is only needed that the information about number of EI, EO, EQ, ILF EIF (available on demand) is published in the standard spreadsheet file.
Simple Function Point - SiFP

- A new method based on only two functional BFCs:
  - Unspecified Generic Elementary Process (UGEP)
  - Unspecified Generic Data Group (UGDG)
- Totally compliant with IFPUG benchmarks
- 2 to 5 times faster
- Easy to learn
- It lowers customer-supplier disputes
- Available for non-specialists of measurement
- Same unitary costs of the IFPUG FP
- Immediate conversion of assets
International Association

SiFPA
SIMPLE FUNCTION POINT ASSOCIATION

- Protection of registered brand
- Evolution of Standards
- Cost model research
- Networking
- Knowledge dissemination
- www.sifpa.org
Conclusions

- A great opportunity is born, if you are using IFPUG or if you were afraid in using IFPUG
- Simple Function Point Association – SiFPA
- We expect a rapid diffusion
- Researches on COSMIC are coming