

INTERNATIONAL FUNCTION POINT USERS GROUP

191 Clarksville Road
Princeton Junction, NJ 08550
USA

www.ifpug.org



Agenda



- **Why SNAP?**
- **What is SNAP (in a nutshell) ?**
- **Does SNAP work?**
- **How to use SNAP when we already use Function Points?**
- **How can I learn more?**
- **What's next?**



Agenda



- **Why SNAP?**
- **What is SNAP (in a nutshell) ?**
- **Does SNAP work?**
- **How to use SNAP when we already use Function Points?**
- **How can I learn more?**
- **What's next?**

Why SNAP?

Non-functional Software Sizing – The Need



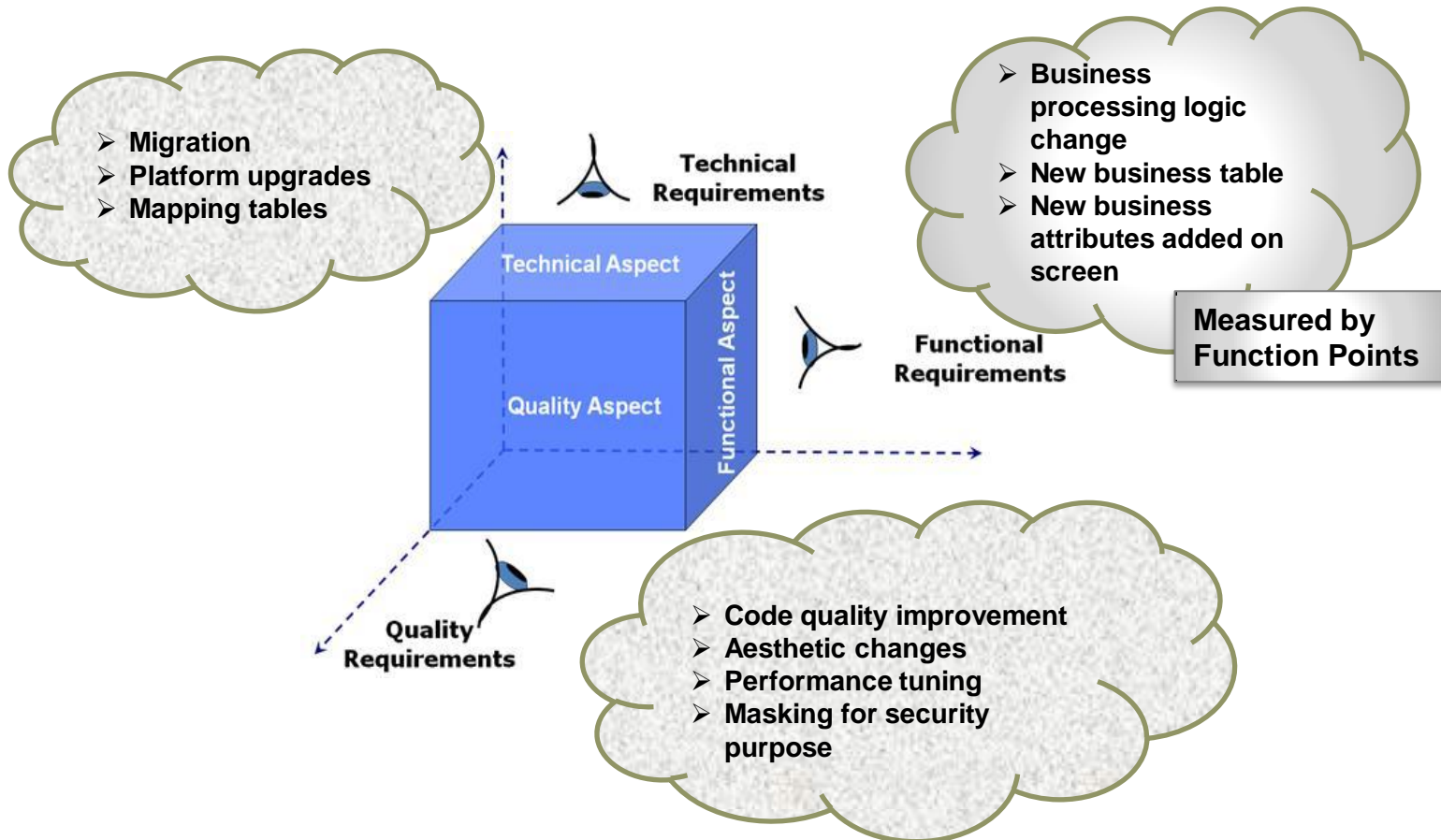
- ❑ In many cases, more than 50% of the life cycle costs of software projects are related to non-functional requirements (NFRs).
- ❑ Until recently, sizing NFRs was not covered by any generally agreed-upon, structured sizing methodology.
- ❑ Better planning and estimations can be done with a standard non-functional sizing methodology.
- ❑ Sizing functional requirements through *Function Point Analysis (FPA)* and non-functional requirements through *Software Non-functional Assessment Process (SNAP)*, gives a more complete picture of the software under analysis.



Why SNAP?



Software – A 3D Perspective



Why SNAP?



With SNAP

- Measure technical and quality requirements of software.
 - Use SNAP Points and Function Points together for more complete software measurement.
- Benefit for Software Projects:**
- Improve estimation accuracy.
 - Improve scope management.
 - Improve delivery and schedule planning.
 - Communicate more clearly with stakeholders on NFRs.
 - Build better benchmarks.
 - Have non-functional baseline in addition to current functional baseline



Agenda



- Why SNAP?
- **What is SNAP (in a nutshell) ?**
- Does SNAP work?
- How to use SNAP when we already use Function Points?
- How can I learn more?
- What's next?



What is SNAP?

What Do We Measure?



A requirement to **improve performance** can be met by:

Adding or upgrading
the hardware

- No additional size

A Non-functional
Requirement

Improve database
capabilities (adding
indexes, views...)

- Size the database changes

Non-functional
Characteristics

Improve the code
accessing the
database (queries)

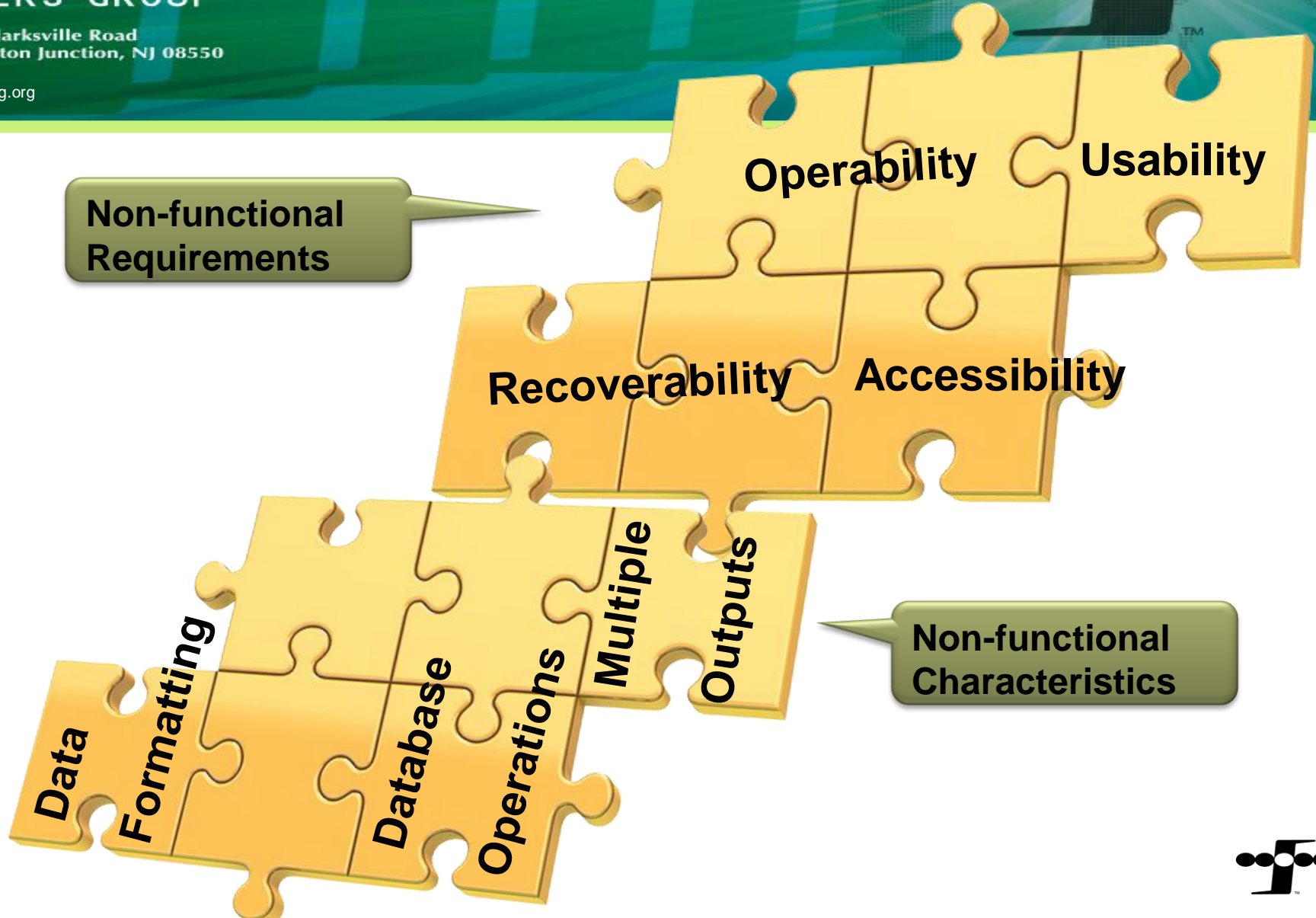
- Size the database queries

All of the above

- Size the database changes
- Size the code changes



What is SNAP?



What is SNAP?

Some Basic SNAP Terms



SNAP Category

A category is a group of components, processes or activities that are used in order to meet the non-functional requirement.

SNAP Sub-category

A sub-category is a component, a process or an activity describing a non-functional characteristic in a way it can be measured.

SNAP Counting Unit (SCU)

The SCU is the component or activity, in which complexity and SNAP size is assessed within a sub-category. Examples of SCU: an elementary process, the entire application, a set of screens, a batch job.

Partition

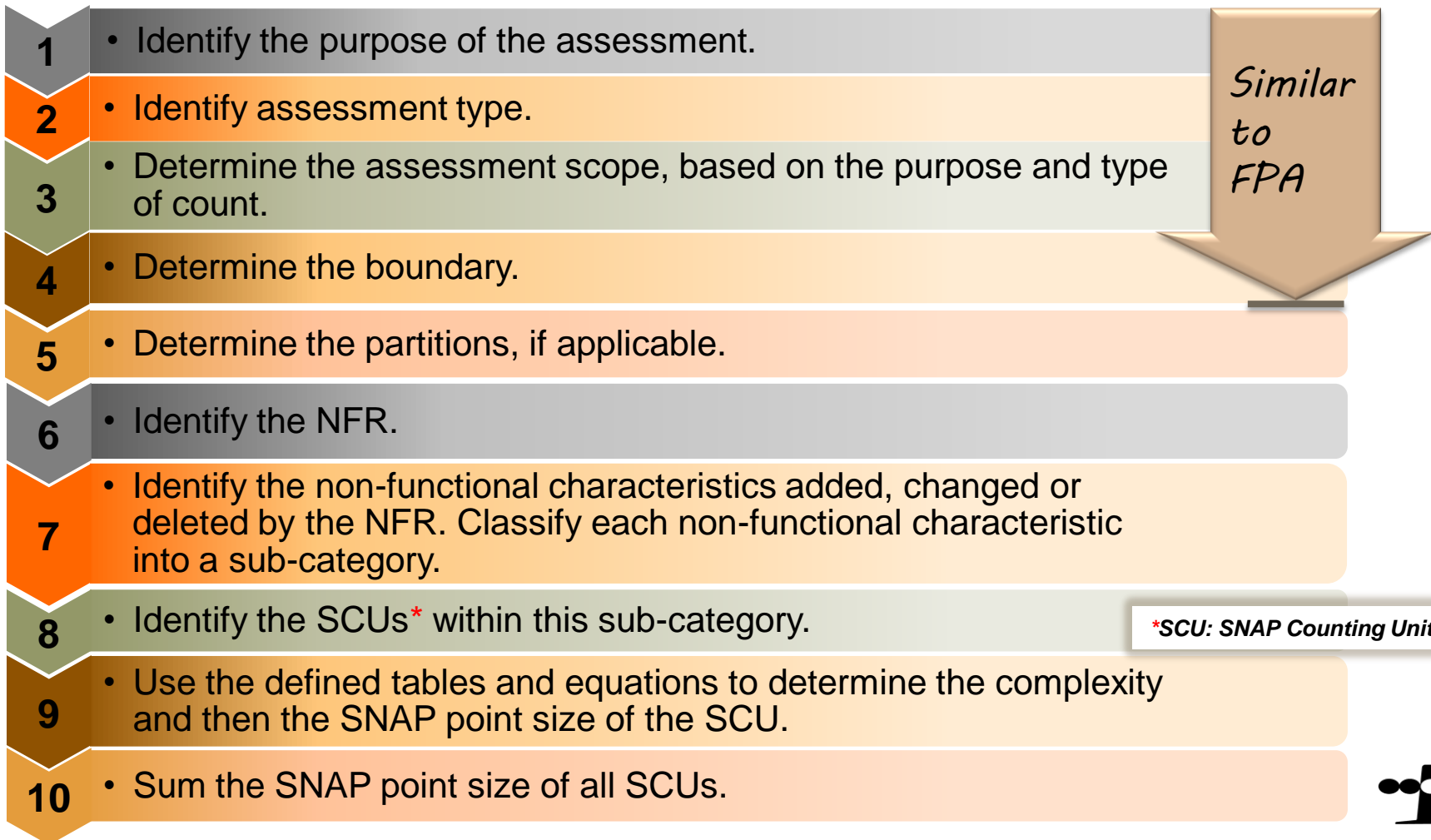
A partition is a set of software functions within an application boundary that share homogeneous assessment criteria and values.

- A partition requires development effort that may not be reflected when sizing the functional aspect of the project/product, using Function Point Analysis (FPA) such as front-end and back-end sub-applications, which form one boundary around both sub-applications.



What is SNAP?

SNAP Assessment Process



What is SNAP?



SNAP Categories & Sub-categories

Data Operations

- Data Entry Validation
- Logical and Mathematical Operations
- Data Formatting
- Internal Data Movements
- Delivering Added Value to Users by Data Configuration

Interface Design

- User Interfaces
- Help Methods
- Multiple Input Methods
- Multiple Output Methods

Technical Environment

- Multiple Platforms
- Database Technology
- Batch Processes

Architecture

- Component Based Software
- Multiple Input / Output Interfaces

Categories & sub-categories do not replace or redefine non-functional requirements; they define how these requirements are met



Agenda



- Why SNAP?
- What is SNAP (in a nutshell) ?
- **Does SNAP work?**
- How to use SNAP when we already use Function Points?
- How can I learn more?
- What's next?

INTERNATIONAL FUNCTION POINT USERS GROUP

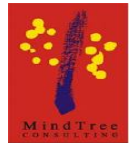
191 Clarksville Road
Princeton Junction, NJ 08550
USA

www.ifpug.org

Does SNAP work?



SNAP Beta Test



In fall of 2012, IFPUG conducted a test to measure the correlation between SNAP size and the effort to produce this size for an internationally collected, statistically large random sample of projects. The beta test had SNAP sizes for 48 projects usable for correlating SNAP sizes with work effort, and an additional 14 projects are usable for the Benford's Law test (without effort data).

Data was collected from Brazil, China, France, India, Italy, Mexico, Poland, Spain, UK, and the USA.

The beta results came from the Aerospace, Automotive, Banking, Government, Fast Moving Consumer Goods, Financial Services, Insurance, Manufacturing, Systems Integrators and Consulting, Tele-communication, and Utilities industries.



Does SNAP work?

Beta Test Results



Statistical Result	Significance
Sample Size = 48	48 projects is a good sample size for statistical significance. (Alan Albrecht did initial Function Points analysis on 22 IBM projects).
Coefficient of Determination $R^2 = 0.89$	0.89 indicates a very strong correlation between the SNAP point size and effort. R^2 closer to 1 approaches “perfect” correlation.
Significance $F = 1.7 \cdot 10^{-23}$	A small value like $1.7 \cdot 10^{-23}$ with the .89 R^2 indicates that the relation between SNAP point size and effort seen in this beta test is not likely to be mere chance. Significance $F < 0.01$ means that the correlation is not likely to be mere chance.
Spearman's Rank Correlation = 0.85	0.85 is another indication of strong correlation between SNAP point size and effort. Rank correlation closer to 1 approaches “perfect” correlation.
P value < 0.0001	This indicates that the .85 found in the rank correlation test has a statistical significance of > 99%. P value < 0.01 means that the correlation is not likely to be mere chance.



The results demonstrate significant statistical correlation of SNAP size and effort.



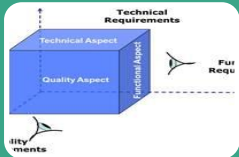
Agenda



- Why SNAP?
- What is SNAP (in a nutshell) ?
- Does SNAP work?
- **How to use SNAP when we already use Function Points?**
- How can I learn more?
- What's next?

How To Use SNAP When We Already Use Function Points?

SNAP and FPA



Non-functional size should be used in conjunction with functional size to provide an overall view of the software application.



A requirement may contain both functional and non-functional aspects. Functional size is measured in Function Points (FP); non-functional size is measured in SNAP Points (SP).



A requirement should be broken into its functional and non-functional components. The segregation should be agreed by both the users and developers.

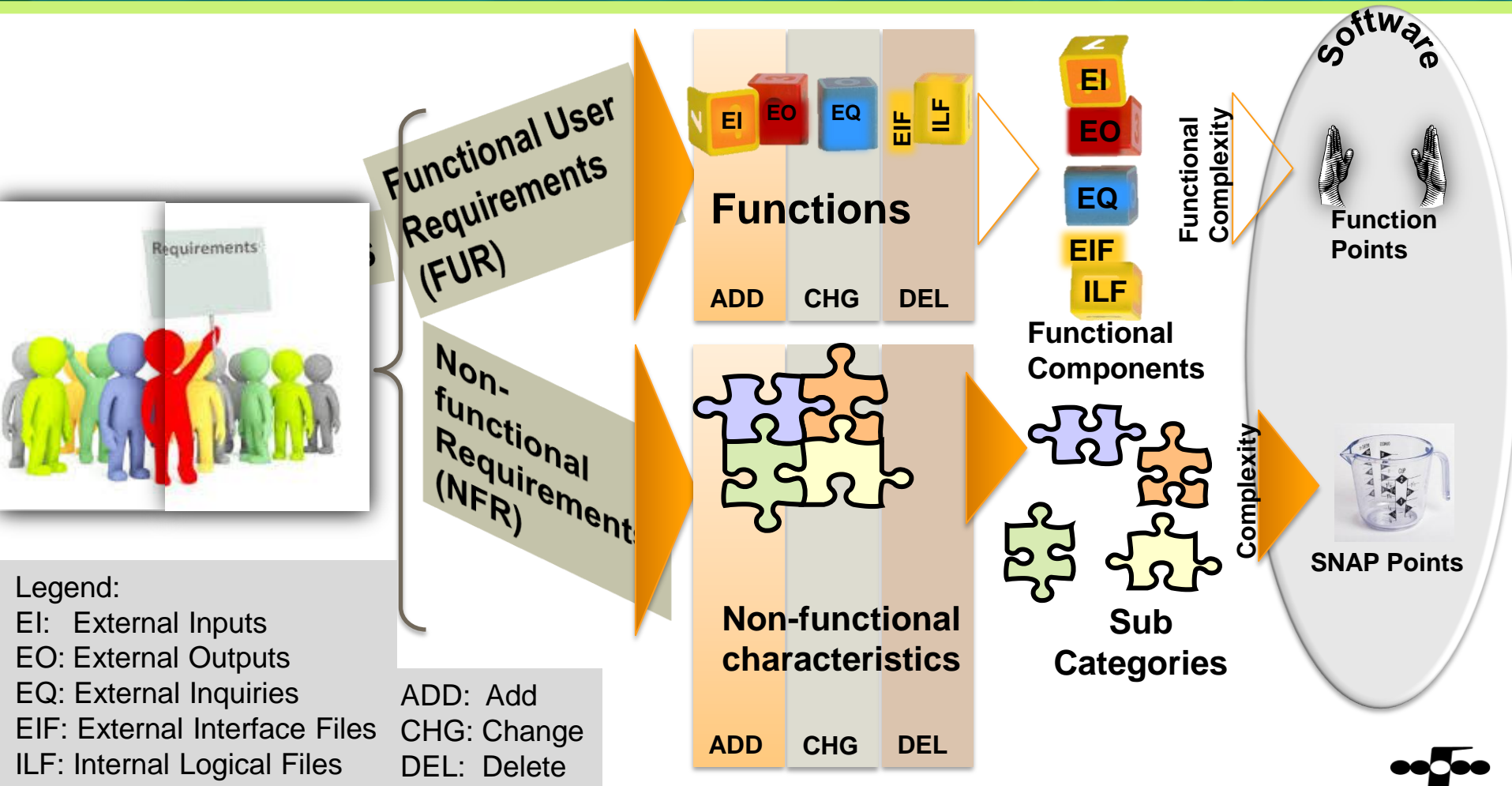


The Assessment Practices Manual (APM) contains guidelines how to count FP and SNAP points and avoid duplicated counting.



How To Use SNAP When We Already Use Function Points?

SNAP and FPA



Agenda



- Why SNAP?
- What is SNAP (in a nutshell) ?
- Does SNAP work?
- How to use SNAP when we already use Function Points?
- **How can I learn more?**
- What's next?

How Can I Learn More?



- Download the APM (SNAP Manual), free of charge, from IFPUG online store. (Click [here](#) to follow)
 - The APM is available in English, Spanish and Portuguese.
- Download, free of charge, assisting materials: SNAP counting tool and SNAP quick reference guide. (The quick reference guide is also available in English, Spanish and Portuguese). Go to [SNAP interest group](#).
- Read SNAP Tips on IFPUG site: <http://www.ifpug.org/itips-utips/>
- [Contact IFPUG](#) and companies that are certified by IFPUG, to obtain SNAP training



- Take IFPUG certification test; be a Certified SNAP Practitioner – CSP.



How Can I Learn More?



- IFPUG provides a “Train-The-Trainer” kit to companies that would like to train their customers with SNAP.
- SNAP interest groups, both in IFPUG site and in LinkedIn are used to discuss practical issues of SNAP users.
- IFPUG is collaborating with ISBSG* to collect SNAP data and add to ISBSG repository.

* The [ISBSG](#) is a not-for-profit organization that established and now grows, maintains and exploits two repositories of IT history data (software metrics) to help improve the management of IT globally.



Agenda



- Why SNAP?
- What is SNAP (in a nutshell) ?
- Does SNAP work?
- How to use SNAP when we already use Function Points?
- How can I learn more?
- **What's next?**

What's next?

SNAP Way Ahead



- The IFPUG Non-functional Sizing Standards Committee (NFSSC) is collecting data to establish SNAP benchmarks.
- The Non-functional Sizing Standards Committee is also looking for academic institutions to expand the ability to research non-functional aspects.



INTERNATIONAL FUNCTION POINT USERS GROUP

191 Clarksville Road
Princeton Junction, NJ 08550
USA

www.ifpug.org



Contact us

WWW.IFPUG.ORG



[SNAP INTEREST GROUP](#)

Group | 156 members | 10 resources | 65 discussions | 0 events

Post your questions and comments regarding SNAP I



INTERNATIONAL FUNCTION POINT USERS GROUP

191 Clarksville Road
Princeton Junction, NJ 08550
USA

www.ifpug.org



Appendices



Evolution of SNAP



2007

- IFPUG approval to ITPC (IT Performance Committee) for project 'Technical Sizing Framework.'
- Goal: Define a framework covering technical aspects of software not covered by Function Points.

2009

- A draft version of Software Non-functional Assessment Process (SNAP) is out for review.

2010

- First SNAP APM beta version released for pilot, looking for industry feedback.
- Post industry-feedback SNAP APM 1.0 BETA released.

2011

- Further beta test in May 2011 across globe.
- SNAP APM Release 1.0 launched at ISMA 6 workshop.

2012

- Beta test.
- SNAP APM Release 2.0 launched at ISMA 7 workshop.
- SNAP available in Portuguese.

2013

- SNAP is in use.
- Training, certification tests are conducted by IFPUG around the globe.

2014

- APM available in Spanish.

