

# How to submit data to ISBSG and receive a free Benchmark Report



## Introduction

The ISBSG collects IT industry data, where output is measured using ISO/IEC standardized and therefore objective, repeatable, auditable methods, such as Nesma, IFPUG and COSMIC function points. Typical key metrics based on function points are:

- Project Delivery Rate (PDR)<sup>1</sup>: Hours spent per function point
- Cost efficiency: Cost (or Price) per function point
- Quality: Defects per function point (in test and/or 1<sup>st</sup> month of production)
- Delivery Speed: Function points delivered per calendar month.

The ISBSG 'New Developments & Enhancements' repository contains thousands of completed projects for which these metrics are calculated. This enables organizations to use this industry data for fact-based understanding and decision making.

The data ISBSG collects is submitted by organizations and individuals from all over the world that wish to contribute to growing the knowledge of the economics of software development projects. Submitted projects data are anonymized and analyzed. A free benchmark report is then returned to the submitter showing how the project performed against the data in the ISBSG repositories.

In this short paper we explain the ways you can contribute to the community by submitting your data!

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<sup>1</sup> The PDR is the inverse of the universal concept of Productivity (output/input) as it is easier to process for human minds, which usually struggles with metrics with many decimals.

## Data Submission Forms

ISBSG preferably collects data using Data Submission Forms. There are multiple forms, depending on the type of data (development or maintenance) to be submitted and the functional-size measurement standard used (mostly IFPUG, COSMIC, Nesma Function Points).

The forms can be found here: <https://www.isbsg.org/submit-data/>

The forms ask for many data items, but not all of them are mandatory. Functional Size is a mandatory field however, as most metrics are dependent on the functional size developed in the sprint, release or project.

A screenshot of part of a data submission form is shown in Figure 1 below.

PROJECT PRINCIPAL CHARACTERISTICS	
<p>5. <b>What type of software project was your project?</b></p> <p><input type="checkbox"/> New Development      <b>(For package acquisition, or support &amp; maintenance, please use the ISBSG forms designed to collect data for these types of projects.)</b></p> <p><input type="checkbox"/> Re-development</p> <p><input type="checkbox"/> Enhancement</p>	<p>New Development: building a new software product in a context where the customer has no existing product meeting their requirements.</p> <p>Re-development: creating a software product with new technology that replaces or enhances a product that customers currently use.</p> <p>Enhancement: changing or extending the functionality of an existing product.</p>
<p>6. <b>Choose the description (i.e. Application Group) below that best describes your project.</b></p> <p><input type="checkbox"/> Business application</p> <p><input type="checkbox"/> Real-Time application</p> <p><input type="checkbox"/> Mathematically intensive application</p> <p><input type="checkbox"/> Infrastructure software</p>	<p>The Application Group defines the principle purpose of the software.</p> <p>Refer to the Glossary of Terms for detailed descriptions of each Application Group type.</p>
<p>7. <b>Indicate whether the project consists of software that is reusable.</b></p> <p><input type="checkbox"/> Custom (non-reusable)</p> <p><input type="checkbox"/> Reusable</p>	<p>Reusable software is designed to be (potentially) reusable as a component of other pieces of software.</p> <p>Custom (non-reusable) software is used by a single project and not intended for re-use.</p> <p>Refer to the Glossary of Terms for more detailed descriptions.</p>

**Figure 1: A sample page from a Data Submission Form**

The data submission forms describe the data that ISBSG collects, and definitions are given in a Glossary of Terms, that is also provided.

It is not mandatory to use these forms. There are organizations that send in an extract of their database in MS Excel. Also, some organizations use commercial models like Galorath, Unison or QSM and they store project data in these tools. The data can then be extracted and submitted to ISBSG.

After project data is submitted to ISBSG, the ISBSG repository manager analyzes it and maps it onto the ISBSG database.

A Data quality Rating, ranging from A to D, is allocated to the submitted data. Rating Definitions are given below:

### Rating Definitions

A = The data submitted was assessed as being sound with nothing being identified that might affect its integrity.

B = The submission appears fundamentally sound but there are some factors which could affect the integrity of the submitted data.

C = Due to significant data not being provided, it was not possible to assess the integrity of the submitted data.

D = Due to one factor or a combination of factors, little credibility should be given to the submitted data.

Only data submissions that receive a Data Quality Rating of A or B are eligible to receive incentives, like the free Benchmark report.

ISBSG offers more incentives when an organization submits more data. Figure 2 is an ISBSG website screenshot, showing how this works:

Incentives for Submitting Data.		
ISBSG appreciates your support and offers the following free gifts for your data submissions.		
Submit 1-4 Projects and receive:	Submit 5-50 Projects and receive:	Submit 50+ Projects and receive:
A benchmark report for your project	A benchmark report for your project	A benchmark report for your project
	An ISBSG report of your choice	All reports from the ISBSG Report Pack
	1 month subscription to the ISBSG Productivity Data Query Tool	1 year subscription to the ISBSG Productivity Data Query Tool

Figure 2: Incentives for Submitting ISBSG Data, from the ISBSG website.

## How to submit data

Data can be submitted using Word and Excel files. The Word files can be downloaded here:

- [IFPUG / NESMA Questionnaire](#)
- [IFPUG / NESMA with SNAP Questionnaire](#)
- [COSMIC Questionnaire](#)

- [Non-functional sized projects Questionnaire](#)
- [Agile Data Collection Questionnaire](#)

In addition, the following Excel template files are available.

- Download and complete a [concise Excel spreadsheet template](#)
- Download and complete a [detailed Excel spreadsheet template](#)

ISBSG also maintains a Maintenance & Support repository with data of over 1600 applications (2022 release). The data submission forms can be downloaded here:

- Download the [Maintenance and Support Data Collection Pack](#)

### Free benchmark report

The free Benchmark reports, that are offered for data submissions show a high-level benchmark of the Project Delivery rate (PDR) against the data in the repository. An example is shown below, in Figure 3.

#### 1.2 Productivity Benchmark

This section of the report compares the development team productivity of your project to those in the ISBSG repository, using Project Delivery Rate (PDR). The calculation of your project's PDR is: 4.7 hours/FP

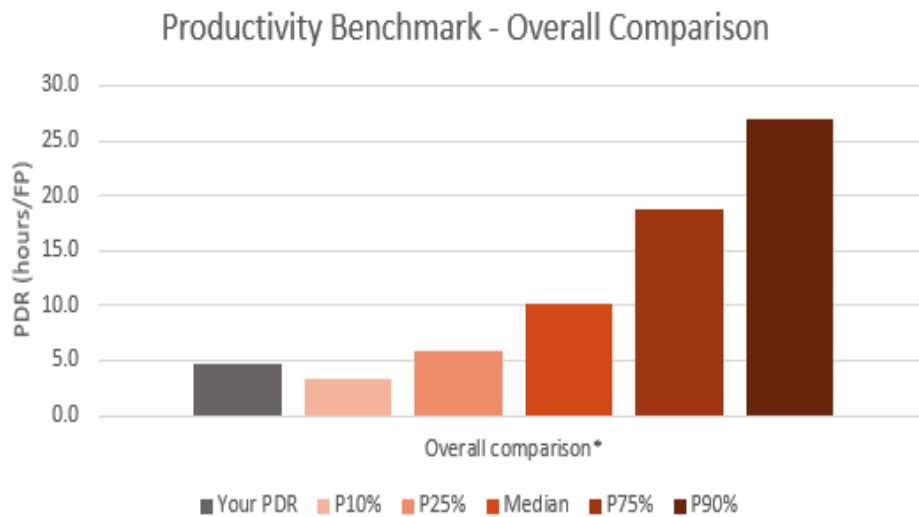
Using your submitted data, the table below presents your project's PDR compared to PDR distribution of projects that have a comparable value for up to four factors.

For example, a major factor influencing PDR is the functional size of an application. Based on the functional size of your application the table shows your project's PDR compared to the PDR distribution of all projects in the repository that involve a comparable functional size.

Depending on the data submitted, the table presents the following factors: Functional size, Programming language and Industry. The overall comparison presents the PDR distribution for all projects taking into account all the factors in the data submitted.

Productivity Benchmark							
Factor	N	Your PDR	P10%	P25%	Median	P75%	P90%
Functional size	1219	4.7	3.0	5.2	10.3	18.0	35.2
Programming language	424	4.7	3.0	5.2	9.6	17.9	28.4
Industry	571	4.7	3.3	5.6	10.1	18.0	31.6
<b>Overall comparison*</b>	<b>167</b>	<b>4.7</b>	<b>3.4</b>	<b>5.9</b>	<b>10.1</b>	<b>18.8</b>	<b>27.0</b>

\* All industries included



**Figure 3: Sample Extract of an ISBSG Benchmark Report**

When producing a submitter's free Benchmark Report, the ISBSG repository manager normalizes the submitted effort to a full life cycle team effort. If, for example, only development and test effort is submitted, the other activities are normalized based on the data in the repository (%requirements, %design, etc.). Although not ideal, this is the only way data can be compared like for like, so that the team performance can be benchmarked in a meaningful way.

### Short reports

ISBSG regularly publishes short reports with high-level analysis of the data in the repositories. These can be found on the ISBSG site under Resources:

<https://www.isbsg.org/resources/>

## The International Software Benchmarking Standards Group (ISBSG)

The ISBSG is a not-for-profit organization founded in 1997 by a group of national software metrics associations. Their aim was to promote the use of IT industry data to improve software processes and products.

ISBSG is an independent international organization that collects and provides industry data of software development projects and maintenance & support activities in order to help all organizations (commercial and government, suppliers and customers) in the software industry to understand and to improve their performance and decision making. ISBSG sets the standards of software data collection, software data analysis and software project benchmarking processes and is considered to be the international thought leader in these practices.

**The ISBSG mission is to support commercial and public organizations to improve the estimation, planning, control and management of IT software projects and/or maintenance and support contracts.**

To achieve this:

ISBSG maintains and grows 2 repositories of IT software development/maintenance & support data. This data originates from trusted, international IT organizations and can be obtained for a modest fee from the website [www.isbsg.org/project-data/](http://www.isbsg.org/project-data/)

### *Help us to collect data*

ISBSG is always looking for new data. In return for your data submission, we issue a free benchmark report that shows the performance in your project or contract against relevant industry peers.

Please submit your data through one of the forms listed on <http://isbsg.org/submit-data/>

**A specific Agile/Scrum data collections questionnaire can be downloaded here:**

<https://cutt.ly/4vnuXVT>

### *Partners*

This page will help you to find an ISBSG partner in your country:

<https://www.isbsg.org/board/>