

# The IUSR Project and the Common Industry Reporting Format

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## ABSTRACT

For 3 years, the National Institute of Standards and Technology (NIST) has been leading the Industry Usability Reporting (IUSR) project. The purpose of the project is to increase the visibility of software usability. Participants are from major software suppliers and customer organizations

This poster presents an overview of the IUSR project. Major emphasis is placed on the Common Industry Format (CIF) for reporting the results of usability tests. The current focus of the group centers around Pilot Testing to validate the use of the CIF. Additional information about the IUSR project can be found at: [iusr@nist.gov](mailto:iusr@nist.gov).

## Keywords

Software usability, usability testing, Common Industry Format, procurement, CIF, IUSR

## INTRODUCTION

Many factors affect a corporation's decision about which software products to purchase. One key factor is the software's *usability*. In simple terms, usability reflects:

- How easy the software is to learn,
- How easy the software is to use
- How productively users will work
- The amount of support users will need

Software developers employ a variety of techniques to ensure software usability. In general terms, these techniques involve studying the users to develop an understanding of their needs and iteratively refining versions of the software based on *usability testing* results.

## Purpose and Goals of the IUSR Project

In making purchase decisions, companies and organizations have traditionally had little indication of how usable a product would be or how much training and support its users would need. The situation has made it

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difficult to compare products, to plan for support, or estimate total cost of ownership.

The goals of the IUSR Project are to:

- Encourage software suppliers and consumer organizations to work together to understand user needs and tasks.
- Develop a common usability reporting format for sharing usability data with consumer organizations.
- Conduct a pilot plan to determine how well the usability reporting format works and to determine the value of using this format in software procurement.

## Scope of the IUSR Project

Usability testing can be valuable for a wide range of products, however the IUSR Project is initially focused only on software. We do recognize that the usability of hardware (printers, copiers, fax machines, etc.) is important and often tightly integrated with software. The initial focus on software was intended to narrow the focus of the initial project so that a pilot study could be conducted. Extending the scope of the reporting standard to include hardware and other products should be addressed later in the project.

## REPORTING FORMAT

The IUSR Project has developed the initial version of a common format for reporting usability test results, referred to as the Common Industry Format (CIF). The intended reader of a CIF report is a usability or human factors professional. The reporting format identifies the minimum format of shared usability information to allow consumer organizations to evaluate test results or replicate the tests if desired. Organizations that participate in using the format may choose to provide more than the minimum format.

## Why a Common Format is Needed

A format providing common information is needed because there are many possible ways to report usability results. The purchase team may require an evaluation of the validity and relevance of any test that it uses to support its decision-making. A common format for reporting the

test and its results facilitates evaluation of the test and the interpretation of its results. It also reduces misinterpretation of the test results. A common format for reporting usability tests therefore benefits both suppliers and consumers of software products.

#### **Scope of the Reporting Format**

The detailed instructions for the report format are given in the document entitled “Common Industry Format for Usability Test Reports”.

The report format covers such topics as:

##### *The description of the product*

As some products have several releases and versions, the product description should include this information. The description should explain basic functionality of the product and the intended users of the product.

##### *The goals of the test*

User testing may be performed to accomplish a variety of goals, including problem identification or diagnosis, design alternatives comparison, or to complete a summative test. The goal(s) of the reported test should be clearly stated.

##### *The test participants*

This section should include information on the number of users who participated and the criteria by which they were selected.

##### *The tasks the users were asked to perform*

This section should list the specific tasks that participants were asked to perform during the study.

##### *The experimental design of the test*

This section should explain the logical configuration of the test conditions, including independent variables, what comparisons, if any, are intended between groups, and how conditions which might contaminate the results are brought under control.

##### *The method or process by which the test was conducted*

This section should report the sequence of events that was actually employed to instruct the test users, how well they followed it, any intervention such as coaching, and materials used to give instructions or ask questions of them.

##### *The usability measures and data collection methods*

Usability measures may include objective measures of effectiveness, efficiency, and how much effort is required to

learn to use the product successfully. Subjective data on user satisfaction should also be collected.

##### *The numerical results*

This section should report the data analysis procedures and summary data. The results may contain summary statistics such as the mean, median, range, standard deviation, and standard error of the estimate. Graphical methods are also to be included as appropriate.

#### **THE PILOT STUDY**

A Pilot is being conducted to determine the value of incorporating usability results into decision-making for software purchases, and to refine the procedures and reporting format.

Currently, the IUSR project group has been concentrating on pilot testing the CIF to determine its validity. The initial test plan called for the formation of pairs of industry partners – one a supplier of software and the other a consumer. This study design has been pursued by some members but has proven problematic for widespread implementation. Some of the problems include: inability to find a software product that was in a suitable state of development for both supplier and consumer, hesitancy about sharing information, and uncertainty about how a good study should be designed. Due to these kinds of issues, the group decided to pursue a multi-prong approach in which participants were free to choose a design that provided the tester(s) with a level of comfort while providing the project with good quality data. The most common alternative approach has been one in which the CIF is used by a single organization to capture the results of usability tests. Other participants use CIF reports as a communication mechanism without calculating cost information.

#### **FUTURE DIRECTIONS**

The Common Industry Format is currently advised for use when the product being tested is software and where the testing methodology is summative in nature. Our initial results of validating the form lead us to believe that it might also be possible to adapt the format for reporting on hardware testing, testing of adherence to accessibility guidelines, as well as to various formative test methods. The CIF might also be useful as a requirements document