

# Certified Practice in Usability™

Criteria for Levels III, IV, and V



**Human Factors International, Inc.**

We help make companies user-centric

Prepared for:

General Distribution Unlimited



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## Definition of Terms

The following terminology is used in this certification program...

### **Central Repository of User Ecosystem Data**

An online repository that holds the research and resulting models of the users, scenarios, environments, artifacts, and opportunity points. It may also hold specifications for user interfaces, methods, and standards.

### **Certified Practice in Usability™ (CPU)**

A certification provided by Human Factors International, Inc (HFI) to organizations to verify that they have a given level of maturity in their ability to deliver usable designs.

### **Certified Usable Design™ (Level III, IV, or V)**

A product, application, or web site that has been certified to have been designed with a user-centered methodology, overseen by certified staff, and with appropriate usability engineering infrastructure. The level indicates the maturity of the organization that did the design work. While HFI does audit the methodology and scan the design to ensure that it does not egregiously violate good practice, this certification in no way ensures that every user will be able to operate the offering successfully. It also in no way ensures that there will be no accidents, property loss, injury, or death resulting from the offering. The certification only provides assurance that there has been a level of due diligence and knowledge applied to the objective of usability as a part of the design process.

### **Certified Usability Analysts™ (CUA)**

An individual who has passed the testing for certification in usability engineering offered by Human Factors International, Inc. (HFI). This certification has been available since 2002.

### **Executive Champion**

An executive who will support the strategic planning, resource allocation, and cultural integration of a usability team. This is NOT an individual who is working full time in the usability group. It is an executive with strategic and budgetary influence over the overall design process in the organization being certified. It is important that the executive has influence across the design organizations as the role requires managing the acceptance of usability work as an essential part of the overall design process.

### **FTEs**

When counting the number of usability staff we consider “Full Time Equivalents”. Therefore, you might have two half time contractors who are certified and that would count as one staff member.

### **Institutionalization of Usability**

Changing usability work from a fragmented practice based on the skills and knowledge of individual contributors to a mature and process driven operation. Institutionalized operations are aimed at providing industrial strength usability work with consistency and efficiency.

### **Maturity**

The goal of having an organization which routinely provides usable designs through systematic process, standards, and certified staff who are working in a culture that supports usability work.

### **Offering**

A product, application, or web site.

### **Overall Design Community**

All the professionals involved in the design of products, applications, or sites. This would include market researchers, usability staff, graphics staff, architects, industrial designers, and programmers. It also includes design managers and administrators.

### **UI standards**

Specific requirements for the design of user interfaces that ensure appropriate consistency across designs. There are generally reusable modules of design as well as rules for control/display operation.

### **Usability (as a characteristic of a design)**

The design has been optimized for human usage with respect to task completion speed, accuracy, self evidency (minimized training requirement), satisfaction, and safety. This does not mean that every user will be able to operate the offering in a flawless way (or even avoid lethal mistakes). It means that care is taken to optimize the design so that the overall usage by the target population of users is effective.

### **Usability (as a profession)**

Professionals that work to optimize the usability of designs. They apply specialized methods in human-machine interaction design, specialized research results, and insights from the fields of psychology, ethnography, and sociology. The following terms are basically synonymous: Usability Engineering, Ergonomics, Human Factors Engineering, Personnel Sub-System Design, Human-Machine Interface Design, User Experience Design, Customer Experience Design, User-Centered Design.

### **Usability Maturity Model**

In this document we refer to the model of maturity of usability operations created by Human Factors International. There are other maturity models which are also of value. But the HFI model is the basis of this certification.

### **Usability Staff**

People with skills in the usability profession working on user-centered design activities. This does NOT include graphic artists or programmers working on interface coding unless they are trained in and working on user centered design tasks.

### **Usability Testing Lab**

A designated space with facilities to have participants complete simulated tasks while their work is observed unobtrusively and recorded for analysis. It must be possible for observers to monitor both the user and the interface.

### **Usability Quotient™**

A systematic evaluation of a design method to see if it includes the essential user centered design activities. The activities are weighted based on importance of each activity as a determinant of design quality. It was developed by HFI in conjunction with AT&T in 2002.

### **User-Centered Design**

A design process that puts the user's needs and limitations first. The design process may concurrently consider technical challenges. But the primary focus on the initial design activities must be on dealing with the user's perspective. Then throughout the process, activities must be followed to attempt to ensure that most of the users will be able to use the offering effectively.

**Scorecard**

A numeric evaluation of a design which is based on a systematic set of dimensions of evaluation (e.g. navigation, error handling, etc).

**Stamp**

HFI provides a graphic image as an indicator of certification. There are stamps for certified individuals, practices, and designs.

**Written Strategy**

A set of planned initiatives which will move forward and/or sustain institutionalization of usability.

## Overview

### Purpose

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In our continued effort to bring criteria for standardization and quality assurance in the usability industry, Human Factors International, Inc. is offering an additional form of certification. We will offer organizations the opportunity to become a **Certified Practice in Usability™ (CPU)**.

This document describes how to gain certification for a practice within an organization. A separate document “*Certified Usable Designs – Products, Applications, and Web Sites*” describes how a certified organization can then gain certification for the offerings they design.

### Basis





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We have been offering individuals the opportunity to become Certified Usability Analysts™ since 2002 and have over 2,800 people certified (which may well account for 10% of the world’s population of capable professionals). We will now administer a program to allow organizations to gain recognition for their institutionalization of usability (see *Institutionalization of Usability: A Step By Step Guide* by Eric Schaffer, Published 2004 by Addison Wesley).

### Model of Certification

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We have published a Usability Maturity Model and the certification is derived from the latest version of this model. The levels of certification directly correspond to the levels in that model.

Usability Maturity Chart <small>Version 2.0</small>						
						Managed Usability
Usability Activity	Level 1 Beginning Usability	Level 2 Executive Champion	Level 3 Essential Capabilities	Level 4 Full Capability	Level 5 Mature Practice	
<b>Strategy</b>						
Written Strategy	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
<b>Infrastructure</b>						
User Centered Design Methodology	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
User Interface Standards	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
Repository of User Ecosystem Data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
Usability Test Laboratory	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
Metrics and Continuous Improvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
<b>Education and Training</b>						
Regular Executive Briefings	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
Usability Introduction for Design Staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
Professional Training for Usability Staff	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
Advanced Training for Usability Staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
<b>Staffing</b>						
Executive Champions	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
Managed Usability Organization	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
Core of Certified Staff	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
Sufficient Staff to Meet Demand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	
<b>Organization Certificate Audit</b>						

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## Rights of CPUs

This certification will allow organizations to solidly identify themselves as having established and verified expertise in the design of usable products, applications, and web sites. They will receive a plaque, certificate, and stamp (which can be used in marketing, proposals, and sales situations). They will also be listed in our web directory of certified organizations.





A CPU can also setup internal capability to prepare submissions for certification of individual products, applications, and web sites.

## Languages for Submission

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The submission must be in English, French, German, Hindi, Mandarin, or Tamil.

## Submission of Designs

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All designs must be submitted in for to allow inspection of the user interface. This can include a specification, prototype, or online access. For physical products a detailed specification, prototype, or manufactured product can be submitted. If a physical product is submitted, some additional time will be required to allow for shipping, and we will bill separately for shipping-related costs.

## Limitations of Certification

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Human Factors International, Inc. has been envisioning a certification process since 1981. We attempted to develop a certification based on usability testing. However, the nature of usability makes this impossible. Designs are focused on different users and different scenarios. This means that there is not a consistent criteria for adequate design. A word processor for student papers would have very different certification criteria from a word processor for desktop publishers. Even within a very precise target there are tradeoffs where a design might be harder to learn but faster at completing a given task. Beyond this, usability testing itself is only valid for short-term use of a design. It will generally measure the initial hour of usage. But it may be better to have a design that is less easy to learn in the short run, but that gives much better performance in long-term usage. We believe there can never be a concrete and fair criteria for certification of usability based on testing alone.

The approach that we more recently developed is to ensure that staff with certified capabilities work with an adequate set of methods, standards, and tools, and that they complete a proscribed set of activities designed to ensure good usability. We believe this approach gives the best assurance possible that due diligence has been exercised in creating the design. In addition, in reviewing submissions we will provide an external review of the design to ensure that reasonable design practice was applied.

All designs carry risks. All designs that are used by people can be used incorrectly and the results can be catastrophic. So this certification does not mean that there will be success and safety in all operations of the product, application, or web site. But it does mean that there are staff with an established level of competence who are completing procedures designed to ensure usability of the design.

## **Confidentiality of Submission**

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When you submit your company material to Human Factors International, Inc (HFI) for auditing purposes, you can be assured that that this material will be treated with the utmost confidence. Within HFI your submission is reviewed only by a select, small team of auditors. This team is not allowed to make copies of ANY material and is legally obligated to refrain from any disclosure whatsoever to outsiders or others within HFI who do not have a demonstrated strict need to know. This need to know would be in conjunction with performing the prescribed audit function and would be limited in nature, such as compartmentalizing the information, to avoid full disclosure of materials. No information in any case, is disclosed to anyone in the HFI sales organization. HFI will NOT disclose your submission nor results to anyone outside of your designated auditing team within our company. Your submission and results are encrypted before storing in archive and only executive management maintains a list of keys. If it becomes necessary to disclose your submission and/or any results, to any external party under court order from an authorized legal entity (such as a court body with jurisdiction over these materials), you will be advised and given the opportunity to object to this disclosure.

## Requirements of Certification

### Level III Certification

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This certification affirms that the organization has the essential facilities and staff to be able to deliver a usable design.

Requirements....

- Written strategy for growing the usability operation. This must include plans to close the gaps to move forward to level IV within the next four years.
- User-centered methodology (with a Usability Quotient™ score of at least 60% (See Appendices))
- UI standards with reusable examples (need not be documented fully)
- Access to usability testing lab (established rental acceptable)
  
- At least 2 executive briefings on usability in last 12 months. These briefings can include examples of design work, documented value of user centered design, best practices, or development of infrastructure. A briefing must last for at least 30 minutes.
- At least 2 educational presentations on usability in last 12 months provided to the general design community within the organization
- At least an average of 1 day of professional usability training or usability oriented conference attendance for each usability team member
  
- Identified executive champion with very basic understanding of usability (established by interview, correctly answering 50% of questions (See Appendices))
- Established usability organization (organization chart has at least one organization with responsibility for usability as a part of their mandate)
- Four certified usability staff or FTEs (CUA, CXA, CPE, CHFP all acceptable)
  
- Submitted design passing minimum design standards (70% score on appropriate product scorecard (see Appendices)).

Annual audit from HFI

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## Level IV Certification

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This certification affirms that the organization has the complete set of facilities and staff necessary to reliably deliver usable designs. This includes a complete methodology, standards, and a critical mass of competent usability professionals.

### Requirements....

- Written strategy for growing the usability operation toward Level V. This must include a solution to increase staffing to meet demand.
  
- User-centered methodology (with a usability quotient score of 100% (See Appendices))
- UI standards with reusable templates and documentation of rules
- Central repository of user ecosystem data (informal project repository acceptable)
- Access to usability testing lab (established rental acceptable)
  
- Human Performance and Experience metrics facility available and employed for at least one application.
- At least 2 executive briefings on usability in last 12 months. These briefings can include examples of design work, documented value of user centered design, best practices, or development of infrastructure. A briefing must last for at least 30 minutes.
- At least 2 educational presentations on usability in last 12 months provided to the general design community within the organization
- At least an average of 1 day of professional usability training or usability oriented conference attendance for each usability team member
  
- Identified executive champion with basic understanding of usability (established by interview, correctly answering 60% of questions (See Appendices))
- Established usability organization (at least one usability oriented appears on organization chart)
- Seven certified usability staff or FTEs (CUA, CXA, CPE, CHPP all acceptable). Exception: If the organization has sufficient usability staff to support their design projects, then there can be as few as FOUR certified staff as long as this represents at least 8% of the design community (including all coding).

- Four submitted designs passing minimum design standards (80% score on appropriate product scorecard).

Annual audit from HFI

## Level V Certification

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This certification affirms that the organization has the complete set of facilities and staff necessary to reliably deliver usable designs. This includes a complete methodology, standards, and a critical mass of competent usability professionals. It also indicates that user centered design is a normal and expected part of the design process and that usability has been internalized into the organization's culture. We expect that all Level V organizations will have been Level IV for at least two years.

Requirements....

- Written strategy for maintaining the current capabilities and continuous improvement of the usability operation including adaption of new user-centered design capabilities (e.g., user-centered strategy, innovation, and persuasion).
- User-centered methodology (with a usability quotient score of 100% (See Appendix))
- UI standards with reusable templates and documentation of rules
- Central repository of user ecosystem data (central project repository capable of recalling related ecosystem parts for a product/application/site, project, user, or environment (see Appendix))
- Established usability testing lab
- Human Performance and Experience metrics facility available and employed for at least one application.
- Evidence of review of metrics and application of continuous improvement processes to enhance usability of at least one design.
- At least 4 executive briefings on usability in last 12 months. These briefings can include examples of design work, documented value of user centered design, best practices, or development of infrastructure. A briefing must last for at least 30 minutes.
- At least 4 educational presentations on usability in last 12 months provided to the general design community within the organization

- At least an average of 3 days of professional usability training or usability oriented conference attendance for each usability team member
  
- Identified executive champion with basic understanding of usability (established by interview, correctly answering 70% of questions (See Appendices))
- Established usability organization (at least one usability oriented appears on organization chart)
- Seven certified usability staff or FTEs (CUA, CXA, CPE, CHPP all acceptable)
- Sufficient usability staff to support the design projects that require usability work (generally a minimum of 8% of the design community (including all coding) staff are specialized in usability)
  
- Six submitted designs passing minimum design standards (80% score on appropriate product scorecard).

Annual audit from HFI

## **Cost of Certification**

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Human Factors International, Inc. will complete the review of your submission as well as surveillance research (such as interviews with staff and checking of qualifications). Generally a review will be completed within three weeks and the cost for the evaluation for any submission to a new certification level is \$ 8,795 USD. The renewal of certification for a practice generally requires two weeks and the cost for review is \$ 2,795 USD.

## **Re-Evaluation on Failed Submissions**

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If a submission fails on a given level of certification in a way that can be reasonably remediated within three months (generally no more than three areas for improvement) HFI will allow resubmission of proof on these specified areas any time up to three months after the original submission. There is no charge for this resubmission. For example, if a Level V submission fails due to only two missing CUAs; proof of the full complement of CUAs can be submitted within three months and the certification will be awarded at that time at no additional charge.

# Appendices

## Usability Quotient™ Weighted Criteria

HFI's Usability Central Gold—Usability Quotient™

**Calculate Usability Quotient™**

To calculate your usability quotient add up all the accomplished tasks. This will be a good predictor of the success of your design.

The best score possible is 100. After you check off the items you have completed, the Usability Quotient™ is calculated and shown below. HFI does have a more detailed method which may be useful for large projects.

The values used for this estimate are based on Delphi method estimates by 35 usability professionals with over 400 collective years of experience in the field. We then further adjusted these based on input from the AT&T Usability team.

	Checklist Items	Explanation	Notes	UQ Value (if Complete)
1.	<input type="checkbox"/> Define Brand, style and tone.	Define the character of the site with a list of adjectives (cool, high tech, trendy; or stable, reliable, simple).	Use existing brand values where appropriate.	4
2.	<input type="checkbox"/> Define User Population	Describe the users in terms of skills, knowledge, interests, objectives and concerns.	Also known as user profiles or personae and addresses user's psychographics instead of simple demographics.	8
3.	<input type="checkbox"/> Set Usability Objectives	List the specific objectives from the user's viewpoint. Complete a trade faster than the competitor, or rated easier than driving to store to buy it.	Usability objectives, goals or criteria can be based on task time and error performance or satisfaction survey ratings.	7
4.	<input type="checkbox"/> Define User Environment	Describe the user's environment (interruptions?), pattern of work (once a month), and social context (needs to get supervisor's approval).	Based on interviews and observations during a contextual inquiry.	6
5.	<input type="checkbox"/> Analyze Current Tasks	Understand how the site functions are done today. Draw a taskflow diagram.	Use contextual inquiry techniques. Develop user scenarios of use. Can be derived from use cases.	9
6.	<input type="checkbox"/> Redesign Tasks	Develop a story of how the functions and tasks will be done in the new application. Describe the scenarios and work to make them simple and easy. Optimize use of new technology.	Re-engineer and match the task flow to the limitations of the technology used in the application under development.	13
7.	<input type="checkbox"/> Verify Useful with Unique Value	Check that the site will offer substantial benefits, beyond other sites, applications, or manual facilities.	Does the site offer compelling value to make users return. Is it sticky?	4
8.	<input type="checkbox"/> Verify Practical	Conduct a formal walkthrough of the taskflow design to ensure that it will be practical in the real world environment.	Is the site practical from a common sense point of view?	3
9.	<input type="checkbox"/> Test Navigation	Run a short usability test to make sure people can find things on the prototyped main navigation pages.	Use low fidelity paper or similar prototypes.	9
10.	<input type="checkbox"/> Test Aesthetic Appeal	Run the test that validates the positive appeal of the visual design. Also validate if the design supports the branding objectives.	Use the test of brand perception to measure that the design is aesthetically pleasing and supports the brand.	2
11.	<input type="checkbox"/> Use Page Design Standards	Design most pages by copying from sample templates.	Use generic or customized best practice page templates.	7
12.	<input type="checkbox"/> Complete Detailed Design by Staff with Training in Usability	Get at least basic training in usability before designing pages.	Can be an HFI-Certified Usability Analyst™.	8
13.	<input type="checkbox"/> Review All Pages Systematically for Usability and Consistency	Review the pages for usability and consistency. Do this with someone NOT on the development team.	Do a walkthrough of the site using the most important user tasks and user profiles.	7
14.	<input type="checkbox"/> Usability Test Site or Application	Complete a simulation test where users complete a set of tasks and see where they have problems. Fix the major problems.	Use in-person one-on-one testing with the "Think Aloud" protocol. Can be supplemented with remote online testing.	7
15.	<input type="checkbox"/> Monitor Initial Usage	Review initial usage with click stream analysis and user data. Fix significant problems.	Establish success metrics and monitor them.	6
<b>Project's Usability Quotient™</b>				<input type="checkbox"/>
<b>(0-100)</b>				

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## Example Scorecard

The following is a sample from our interactive voice response application scorecard.

Scorecard - Reviewer 1			
<b>NOTE:</b> Each metric is rated on a scale of 1 to 5 where, 5 = the metric is fully met or exceeded 4 = the metric is met 3 = the metric is partially met 2 = the metric is met very poorly 1 = the metric is not met			
No	Usability Dimensions	Reviewer Rating (1-5)	NOTES
<b>1 Navigation &amp; Information Architecture</b>			
1.01	Important menu options are placed at the beginning.	5	
1.02	Language options are provided upfront.	5	
1.03	Current location is clearly stated at the beginning of each prompt.	5	
1.04	Make navigation and help keys available from all places in the system.	5	
1.05	Menu / category labels are descriptive and distinctive.	5	
1.06	There are no more than five options in any menu.	5	
1.07	Menu structure is simple, with no unnecessary levels.	5	
1.08	Prompts are succinct yet readily understandable.	5	
		<b>100.0%</b>	
<b>2 Content</b>			
2.01	The language used is simple and clear.	5	
2.02	Jargon is avoided.	5	
2.03	Sentences are short.	5	
2.04	Terminology used is consistent.	5	
		<b>100.0%</b>	
<b>3 Presentation</b>			
3.01	The IVR 'voice' sounds professional; high audio quality of recording.	5	
3.02	Alternative options are clearly delineated by suitably paced pauses.	5	
3.03	Assembled phrases are clear and sound natural.	5	
		<b>100.0%</b>	
<b>4 Interaction</b>			
4.01	The mapping of tasks / functions to buttons is consistent.	5	
4.02	All necessary functionality is available without leaving the system.	5	
4.03	The user can interrupt at any time.	5	
4.04	It is always clear what is happening.	5	

## Example Questions for Executive Champion

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An executive champion must be identified who has substantial budgetary responsibility within the design organization. The executive champion completes a 15-20 minute interview with ten questions. The interview is intended to ensure that the executive has a basic understanding of the requirements for usability engineering work and ensures that the executive does not hold major misconceptions that would make him/her ineffective in supporting the organization.

Who is the key manager responsible for ensuring the user/customer-centered design is the culture of your organization?

Can you give an example of a specific design improvement made based on usability engineering insights?

Why is it important for your organization to be able to design usable products, applications, or web sites?

How much additional time does it take to create a successful design with a usability team involved?

What are the qualifications or skills that are important for usability staff?

Is usability mostly a function of people applying common sense?

Is usability work mostly about usability testing?

Can usability work be completed without direct access to a representative sample of actual end users?

About how long does it take someone to become competent in usability work?

In the next year, what is your main thrust for the improvement of your usability engineering capabilities?

## Definition of Ecosystem Repository Requirements

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The usability organization must store the results of all work including data gathering, usability tests, and design programs. That data must be retrievable with a reasonable level of effort. This is evidenced by the ability to deliver the results of the following types of requests within a 4-hour period or less.

For a given User Profile provide a list of....

- All projects (e.g. Usability Tests) that are focused on That User Type
- Scenarios Studied that involve That User Type
- Environments that have been studied which That User Type Appears Within

For a Given Product, Application, or Web Site....

- All types of users for whom that Facility has been designed
- All scenarios for which that Facility has been designed
- All projects that have been completed to design or improve that facility