



STANDARDS THAT MAKE A DIFFERENCE

This past June, ANSI developed a survey to ask the standards community to identify those standards that make a difference, and why. This is a compilation of the responses received.

ANSI/INCITS – 354

Common Industry Format for Usability Test Reports

The Common Industry Format provides usability professionals the ability to document information in a manner that enables accurate communication of usability data from one organization to another. Standardizing how such data is communicated is a major step forward in establishing usability criteria as part of the critical product/service evaluation process.

Submitted by

Steve Fadden

User Experience Architect, PeopleSoft, Inc.



ANSI/INCITS – 354

Common Industry Format for Usability Test Reports

Promotes consistency and provides strict comparison metrics between products and version. It also reduces variability.

Submitted by

Arin Bhowmick, Oracle Corporation

ANSI/INCITS – 354

Common Industry Format for Usability Test Reports

Usability has long been recognized as a key factor for products' acceptability and competitiveness. This is the first standard that make usability visible in the software procurement process and also laid a good foundation for dealing with usability issues in other areas such as requirements, hardware,web, etc.. We have been using it extensively in many projects and it will play a very important role in promoting usability engineering application in Chinese industry.

Submitted by

Zhengjie Liu, Professor

Dalian Maritime University, China

ANSI/INCITS – 354

Common Industry Format for Usability Test Reports

The Common Industry Format for usability testing is an important initiative in enhancing the usability of all computer software. Software has an overall history of unintuitive design and low levels of usability. Every year there is a tragic cost in human lives due to problems with software in the medical, industrial, and transport areas. Poorly designed, difficult to use software still costs the US economy millions of dollars annually, in lost productivity alone. This unfortunate, and potentially dangerous, tendency is at least partially caused by low operational priority being given by most software manufacturers to examining the usability of their products. With the development of the CIF, usability testing is maturing as a scientific discipline in its reliance on explicitly standardized procedures. In turn, this regularization allows true comparability of test results from different labs for the first time. This fostering of direct comparison – and therefore competition – between software companies can only provide computer users throughout society with better designed, more intuitive, easy-to-use software.

Submitted by

Andrea Evans, Senior Usability Engineer
Oracle Corporation

ISO/IEC 12119: Software Engineering - - Software product evaluation

Requirements for quality of Commercial Off The Shelf software product (COTS) and instructions for testing

Working in a third party test laboratory, we test products for our clients. When we started this activity our main reference was G J Myers - The Art of Software Testing. We conducted most of the tests listed by Myers under System Testing, and adopted our own procedure for conducting testing approved by our own QA. We did the test documentation as per IEEE 829 and were quite contented! In time, our clients asked if we were testing as per a standard. We then realized that in order to have credibility we need to reference our work with a standard. It was then that we found that ISO/IEC standard 12119 for doing this job. We in fact discovered that though we were unknowingly doing what the Standard said we now have a answer to queries from our customers. The standard is simple and easy to implement. In fact we have now adopted the standards route to all our training courses as well. 'Whenever in doubt, look at the standard' is the message in our laboratory both for software testing and when we teach.

Submitted by

Hema Khurana

Electrics Test and Development Centre

ANSI INCITS 135-1992

Information Systems - Database Language- SQL

Consistency in database language is critical to making for compatible systems. This is crucial to my employment, and I couldn't work as effectively without this one.

Submitted by

Ian Bishop

Independent Contractor

ISO/IEC 16509: *Information technology -- Year 2000 terminology*

Speaking, or writing about the multitude of processes, parts and functions of computers and networks without standards for proper terminology would be comparable to traveling around the world, with a destination in mind, and no map, no compass and no transportation to get you there. Standardized terminology is essential to saving time and money. It is essential in allowing people in different departments, states, and even countries, to communicate effectively by uniquely defining each part, process and function, thereby keeping anyone involved "on the same page." Standardization gives a common language to the people of various experiences and skill levels, thereby allowing effective management of IT issues. Physicians use Latin terminology, to ensure that the word/s for specific body parts, functions, or operations, is consistent and the meaning never changes. If you were going in for surgery, you certainly would want everyone participating to understand "rhinoplasty" is surgery on your nose, with no possibility that it could mean anything else!! Standardizations keep meaning consistent, relevant and organized. It is essential to efficient operations in any business.

Submitted by
Sheila Johnson
Howard County Community College

IEEE/EIA Std 12207

Standard for information Technology - Software Life Cycle Processes

In order to develop trusted-partner relationships between software suppliers and users, there needs to be a common basis of understanding of the necessary aspects of SW development and delivery. Software will form the basis of huge parts of industrial and military enterprise in this century and going forward. The current commercial tendency to "cut corners" causes ever-growing dangers as COTS software gains ever-wider use. IEEE/EIA Std 12207 reflects a growing awareness of the need for well-considered and responsible behavior in the business of developing and delivering software products to national and international marketplaces. Until we have well-established SWEBOK and curriculum, it can also provide a practical test for the adequacy (and inadequacies) of the many "flavor-of-the-month" SW development methodologies touted in the advertising-driven trade magazines.

Submitted by

Chuck Walrad, Managing Director
Davenport Consulting

ISO 2553

*Welded, brazed and soldered joints –
Symbolic representation on drawings*

If you don't have clear and precise indications on technical drawings as to where the welds shall be placed you can end up with some pretty unsafe structures! If the weld is placed for example on the wrong side of the joint, bang! the loading is all wrong and no matter what it is you are using be it a car, pressure vessel, airplane or any welded structure, catastrophe could be moments away.

Submitted by

Andrew Davis,

International Standards Program Manager, AWS

NSF/ANSI 49-2000

Class II (Laminar Flow) Biohazard Cabinetry

My company provides field testing services of Class II (laminar flow) biosafety cabinetry, serving owners, contractor installers and biosafety cabinetry manufacturers. In order to provide confirmation that an installed cabinet has met all design criteria and currently meets criteria considered necessary for hazardous environments, we need detailed, instruction on methodology and minimum sensitivity instrumentation. Our employees and customers deserve no less attention.

Submitted by

James E. Easley, Director Technical Services, Micro Filtrations, Inc.

NFPA 5000

Building Construction and Safety Code

Safety codes and standards are the first line of defense in protecting individuals from potential building hazards such as fire, collapse, or other structural failures. NFPA 5000 contains provisions for every aspect of the design and construction of buildings and structures, as well as the design of integrated building systems for health, safety, comfort, and convenience. By protecting the physical structure and contents of a building, the code exceeds the goal of protecting occupants. In addition, NFPA 5000 protects quality of life: there is less chance of a family needing to relocate or a business shutting down due to loss of property. NFPA 5000 also is the first building code to consider emergency responder safety during search and rescue in its development.

Submitted by

Gary S. Keith, Vice President, NFPA

Corrosion Resistant Coatings

As all of us may be aware that each year a country suffers from corrosion problems and it maybe 3-4% of FDP. The standard is absolutely necessary to guide in selecting the right materials.

Submitted by

Pinaki DasGupta, C.P.
Consultants PVT. LTD.

ANSI/NSF 61

Drinking Water Additives

I rely upon this standard to assure that the water treatment chemicals I purchase (about \$25 million per year) are high quality, and do not contribute unhealthy constituents to the drinking water.

Submitted by

Richard H. Moser

American Water Works Service Co.

ANSI/NSF 61

Drinking Water Additives

The drinking water additives standard is important to me as a consumer and as a consultant for the National Park Service. Drinking water is one of the most important natural resources that we have. To ensure that this resource is protected, components of the well, treatment and distribution system is essential for its overall safety. The NSF/ANSI 61 ensures that the components measure-up to the strict requirements for certification and protect public health.

Submitted by

John Leffel, USPHS

ANSI/NSF 60

Drinking Water Treatment Chemicals - Health Effects

I work in drinking water, and that standard is established to protect products used in contact with drinking water. This is a basic principle of public health protection - the products used in our drinking water are safe.

Submitted by

James K. Cleland, Assistant Chief, Drinking Water, Michigan Department of Env. Quality

ANSI/NSF 53

Drinking Water Treatment Units - Health Effects

There are many NSF/ANSI standards that are valuable to the health of the general public.

However, everybody needs drinking water and should have the opportunity for it to be safe.

NSF/ANSI 53 covers testing contaminant reduction claims of a wide range of products that can aide in provided safe affordable drinking water.

Submitted by

Sandy Games, Ecowater Systems, Inc.

ANSI/NSF 53

Drinking Water Treatment Units - Health Effects

Many have drinking water containing a variety of contaminants, both chemical and microbiological. The majority of those faced with contaminants in their water do not have the ability to resolve the problem. They must rely on water treatment dealers, some ethical and some not so ethical, and the regulatory community for help. It is important that the correct piece of equipment be selected for resolution of the problem. Products listed under Standard 53, Drinking Water Treatment Units - Health Effects give the consumer the assurance that the product has the ability to resolve the contamination problem for which it was tested. It may also protect the consumer from spending a lot of money on products that cannot solve the problem, thus continuing to live with contaminated water.

Submitted by

Lee Wikstron, Ph.D.

ANSI/NSF 53

Drinking water treatment units - Health effects

This standard assures that drinking water treatment units for home use perform as advertised and protect the quality of water delivered to the consumer. This standard evaluates products for reduction of important contaminants such as lead, mercury, cryptosporidium, pesticides, herbicides and other unhealthy chemicals. The Standard also evaluates the use of proper materials in the construction of the system to ensure no hazardous chemicals are introduced to the drinking water.

Submitted by

Robert Herman, NSF International

ANSI/NSF 53

Drinking water treatment units - Health effects

Acceptable drinking water is one thing that all citizens of the world require. These citizens must be able to rely on products that they are purchasing to reduce health effects contaminants in their drinking water. NSF/ANSI 53 is the standard that allows manufacturers to ensure consumers that these products are safe to use, are structurally sound, perform as claimed, and have adequate consumer information provided for their use.

Submitted by

Rick Andrew, NSF International

TMO 173-99

Methods of Determining Water Quality

In the broad scheme of things water is without a doubt the single most valuable commodity for the existence of mankind. It is important that all living beings consume water, it is a major food ingredient, we use it as tool to sanitize ourselves and most everything we own. It is vital to production of crops and the growth of things we admire such as flowers. Waterways have served as highways of transportation. The litany of issues that make water important is endless. Simply put, we can survive without Gold but not water and the many useful formats in which it presents itself. Therefore I believe this is a place where the application of Standards is appropriate and necessary. It then follows that setting the bar for Quality is very much in order.

Submitted by

Dennis J. Coyne, AEW-THURNE, Inc



ANSI/NSF 61

Drinking Water Additives

An important standard for determining that a plumbing or water distribution system component does not contribute contaminants to drinking water at harmful levels.

Submitted by

Craig Selover, Manager, Advanced Plumbing
Product Research, Masco Corp.

ANSI/NSF 62

Drinking Water - Distillation Systems

Distillation has long been recognized as one of the most effective means to reduce a broad range of drinking water contaminants. Certifying a system to NSF Standard 62 is one way to demonstrate to the consumer that the system will do everything it is certified to do. This standard is a major platform in Innowave's marketing communication and is used to differentiate Innowave systems from systems that are not NSF certified. Our Dealers use an educational process in selling quality drinking water. Educating consumers about NSF certification and its value is one step in the sales process that we stress a rep should never skip or touch upon lightly. Consumers need confidence and peace of mind. At Innowave, we believe the high quality of distilled water combined with NSF certification is one of the consumer's "best bets" for optimal drinking water.

Submitted by

Jenny Christensen, National Marketing Director, innowave incorporated

ANSI/NSF 60 and ANSI/NSF 61

Drinking Water Additives Standards

Without these standards, municipal and other drinking water providers would not be able to ensure that the additives used in drinking water treatment processes or the physical components of drinking water treatment and distribution systems were safe to use. These standards help to ensure safe drinking water on a 24 hour a day, 7 day a week basis for more than 350 million citizens of the USA and Canada, and probably more around the world. I can't think of anything more fundamental or a greater contribution to human health and well being than that!

Submitted by

T. Duncan Ellison, Canadian Water and
Wastewater Association



ANSI/NSF 61

Drinking Water Additives

It is the only performance based standard that covers toxic chemicals that may leach from drinking water materials. It is accepted in North America and uses, as a basis, harmonized drinking water limits from the USA & Canada.

Submitted by

David C Green, Senior Engineering Consultant,
Health Canada

ANSI/NSF 61

Drinking Water Additives

It is the one standard that impacts virtually all of the products used in potable water applications. Furthermore, Standard 61 provides the basis for protection of the world's water supply.

Submitted by
Mark Clark, NIBCO INC

ASTM D 5299

Standard Guide for Decommissioning of Ground Water Wells, Vadose Zone Monitoring Devices, Boreholes, and other Devices for Environmental Activities

For a number of years, millions of boreholes and ground water monitoring wells have been drilled and installed at locations where significant soil and groundwater contamination may exist. Many of these intrusive activities may have resulted in a "pathway" for contamination to enter the groundwater systems or move to other non-contaminated zones. After the intended use of these boreholes and/or ground water monitoring devices has been completed, they are often left in place with no acknowledgment that they may become a major future "problem" resulting in contamination migration. D 5299 provides sound advice on various materials, methods, and procedures to, hopefully, reduce the potential of additional contamination entering the subsurface environment.

Submitted by

Richard L. Moberly, Sr. Geological Consultant,
URS Corporation

ANSI/NSF 60 and ANSI/NSF 61

Drinking Water Additives Standards

We know that very small levels of chemicals can cause adverse health effects and therefore we have very low level standards for substances in drinking water. However, Standard 60 and its companion 61 came along, we had no standards of materials that the public drinking water is treated with or that it comes in contact with which can impart toxic compounds into the drinking water. It is illogical/deceptive to regulate the drinking water to such a high degree and not those chemicals and facilities that it comes in contact with also.

Submitted by

Gayle J. Smith,
Manager, Permits and Compliance Section,
Utah Department of Environmental Quality

NSF Standard 55 (and subparts)

Ultraviolet Microbiological Water Treatment Systems

UVDI has been an active participant in establishment and updating NSF 55 associated with the application of UV germicidal light to disinfect water. The sub task force of which I am a member, has been successful in establishing a performance criteria in an area which is a mystery to many end users. The NSF standard has also been used as the model for creation of another task force which characterizes all disinfection technologies. The task force provides a forum to share ideas across industry (manufacturers), regulators, and academia.

Submitted by

Larry Randall, Sr. Engineering Manager,
UltraViolet Devices, Inc.

UL 746C

Polymeric Materials - Use in Electrical Equipment Evaluations

There are probably over a billion products acquired by people each year that are influenced by this standard. The design and manufacture of electrical products made with plastic use this standard for electrical and fire safety. There is not a home or office that this standard has not touched.

Submitted by

John Schlafer, V.P., Chief Engineer,
Ecowater Systems, Inc.

ANSI/IEEE C57.12.00

Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers

Purchase of electrical equipment is not driven by standards. A decision to purchase electrical equipment is an economic and business decision. The ANSI/IEEE C57.12.00 and the C57 series of product standards standardize performance, ratings, withstand, etc. so as to "level the playing field" for the user and consumer.

Submitted by

John Rosetti, System Engineer,
Memphis Light Gas & Water

IEEE C-57 collection

for Transformers

The power transformer is the most important piece of equipment that we utilize. The application runs from GSU's to distribution utilization transformers. The need to have standards of specifications, operations and performance is of utmost importance. A users specification cannot cover all the possible information that is contained in the standards and by having standards, the user and supplier have common ground.

Submitted by

Roland Youngberg, Supervisor Substation Design, Midamerican Energy Co.

IEEE Standards Collection

for Distribution, Power, and Regulating Transformers

This collection of standards provides end users (Utilities, Power Producers, & Industrials), the necessary guidelines to develop specifications, operating procedures, operating diagnostics and maintenance procedures for large and medium power transformers. The standards also allows manufacturers to design and manufacturer transformers to industry accepted minimum standards.

Submitted by

Paul Pillitteri, President,
Transformer Consulting Inc., IEEE PES

IEEE-1413

Reliability

This standard fills a void in the electronics industry where no previous industrial or commercial standard of this type existed and where a similar military standard was bent in order to resemble a fit. Since the cancellation of MIL-HDBK-217, for predicting the reliability of electronic equipment, no standard was available to replace it. IEEE-1413 is a standard which is similar to 217, however, not a replacement. The 1413 standard offers methods that were not considered in 217, and offers solutions to reliability problems that were not addressed in 217.

Submitted by

Lou Gullo, Manager, Product Assurance,
Tyco International

NSF/ANSI 2: Food Service Equipment

The U.S. Army is one of the major purchasers of food service equipment. Most equipment is commercial equipment, a limited amount is designed and constructed to meet specific Army including field food service equipment. Regardless of whether the Army purchases commercial equipment or unique built-to-order equipment, the NSF/ANSI standards provide the minimum basis for this equipment. NSF/ANSI 2 is the basic food equipment standard that we use to ensure the Army food service and the American taxpayers are getting good equipment at a fair price.

Submitted by

Thomas J. McNeil, Chief Support
Operations Division Services,
U.S. Army



Z83: Gas Food Service Equipment

It ensures that gas food service equipment are manufactured to meet levels of safety which protect the users of the equipment

Submitted by

Malcom Reay, Director of Engineering,
Garland Commercial Industries

NSF/ANSI Standard 51

Food Equipment Materials

All equipment and most components that meet NSF requirements exhibit the NSF mark, informing the public that all sanitation requirements have been met. However, the raw materials that are used to mold parts for that equipment do not exhibit any mark that proves they are safe for food contact areas. Since raw materials show no regulatory mark, I believe that Std. 51 is one of the most important of all the NSF standards.

Submitted by

Cheryl Appell, Agency Approvals Mgr.,
SerVend International, Inc.



ANSI/NSF 2

Food Equipment and Related Products, Components & Materials

NSF focuses on the essential elements of public health water, food and environment/air. As a food industry regulator the NSF mark gives me the confidence that equipment used to prepare food for the public is properly constructed and safe for use.

Submitted by

Bill Carlson, Town of Vail Colorado

BSR/NSF 3-A 14159-1

Hygiene requirements for the design of meat and poultry processing equipment

This standard provides an way for the meat and poultry processing industry to improve the machinery used to process their commodities. The evaluation process reduces places where bacteria, and soils can build up, and improves the equipment's ability to be disassembled for cleaning and inspection after processing product intended for human consumption, reducing the risk of sickness.

Submitted by

Evan Stachowicz, Equipment Review
Specialist, U.S. Department of Agriculture



NSF/ANSI 51 2002

Food Equipment Materials

This standard ensures that materials used in food service products in direct food contact meet required formulation, corrosion and cleanability standards. This in turn prevents materials which could be toxic, or could contribute to food-borne illness from being used in food service equipment.

Submitted by

Mike Young, Product Engineering Manager,
San Jamar

NSF/ANSI 51 2002

Food Equipment Materials

There are many individually owned restaurants worldwide that do not have the expertise of a large franchise quality control program. For both groups, NSF/ANSI 51 2002 Food Equipment Materials Standard protects the consumer by preventing the adulteration of food from equipment that is constructed with improper materials. This Standard protects the health of the consumer because it requires that the materials used in the construction of commercial food equipment be safe per the FDA's Office of Food Additive Safety, smooth and easily cleanable. Some examples are these materials may not contain lead, arsenic, cadmium, mercury porcelain enamels, or wood for direct food contact use with few exceptions.

NSF/ANSI 51 also prevents food-borne diseases from cross-contamination due to improper materials used on the food contact surfaces of equipment again protecting the public's health. The Standard is revised regularly to keep up with the growing and changing technology.

Submitted by

Janet Greenwood, Retired-Director of Environmental Health,
NSF-Council of Public Health

BSR/NSF 4-200

Commercial Cooking, Rethermalization and Powered Hot Food

Food-borne illness is most often associated with potentially hazardous foods maintained at unsafe temperatures. This standard forced an upgrade to hot holding equipment to make certain that the equipment is capable of maintaining foods at temperatures that prohibit bacterial growth.

Submitted by

Ernest Julian, Ph.D., Chief, Office of Food Protection
Rhode Island Department of Health

BSR/NSF 4-200

Commercial Cooking, Rethermalization and Powered Hot Food

From a health and safety standard point this is where the greatest opportunity exists for temperature abuse of a product. Bringing most foods up to temperature as a result of the cooking phase has some potential for error; however, rethermalization and holding over extended periods of time provide opportunities for "incubating" the food product--resulting in illness or death.

Submitted by

Ben Gale, Director, Dept. of Environmental Health, County of Santa Clara

NSF 7

Commercial refrigerators and freezers

This standard addresses a major problem regarding public health. Surveys have shown that, as an industry, safe food temperatures are frequently a problem. Since a bulk of consumed food needs to be refrigerated, this standard becomes critical. As this standard has been revised, I have personally seen the positive results in the field. As these changes continue to filter down the food equipment chain, public health will ultimately benefit, which should be the prime directive of any sanitation standard.

Submitted by

Jim Brady, Operation Engineer, Wawa, Inc.

NSF 6

Dispensing Freezers

This standard covers our broad range of soft serve and shake freezers. As such, it is used extensively by our engineers and lab personnel as the premier guideline for use in designing and testing this equipment. I know of no other similar standard in the world that is recognized and accepted as widely as this one.

Submitted by

Norm Beckq, Mgr, Engineering Staff
Support, Taylor Company

NSF Food Equipment Standards

2 to 59

These standards and in particular Standard 3 regarding commercial dishwashers and glasswashers, have saved countless citizens from numerous illnesses for nearly 60 years. We know as a fact that citizens can carry and spread diseases. NSF food equipment standards, particularly Standard 3 stop the spread of disease. A great public health achievement.

Submitted by

Tim Roark, Coordinator of Environmental Health Services, Fraser Health Authority

NSF/ANSI 184-2001

Residential dishwashers

Since 1964 Household dishwashers have had the "Sani Cycle" option on some models in a manufacturer's line. The verification of the efficacy of the sanitization was done by the manufacturers. NSF/ANSI Std 184, for the first, time provides the opportunity for Third Party Certification to this NSF standard, assuring the public and public Health Officials that the Certified Dishwasher meets certain requirements.

Submitted by

Ernst Grunewald, Whirlpool Corp.



NSF 4:

Commercial cooking, rethermalization, and powered hot food holding and transport equipment

This standard is used to evaluate the vast majority of Henny Penny's product offering. Being a high-end foodservice equipment manufacturer, Henny Penny uses NSF 4 to assure our customers that our equipment is top-notch. Using NSF 4 also assures their customers will be safe purchasing food from our equipment

Submitted by

Jim Anglin, Henny Penny Corp.



ANSI/NSF 3

Commercial Warewashing Equipment

This standard is relied upon by health inspectors, consumers and customers in the U.S. and many foreign countries to ensure our commercial dishwashers will clean and sanitize dishes to meet all appropriate sanitation Codes.

Submitted by

Joel F. Hipp

Hobart Corporation

NSF 184

Residential Dishwashers

In our country inn/ bed and breakfast industry there is great inconsistency with regard to regulations affecting us and our guests. This standard responds to that need as a first step. As small businesses in a highly competitive hospitality environment, this standard will help innkeepers maintain both health standards for their guests, but also purchase equipment at reasonable rates.

Submitted by

Jerry Phillips, Executive Director, PAII

BSR/NSF 3-A 14159-1

Hygiene Requirements for the Design of Meat and Poultry Processing Equipment

This family of voluntary standards is absolutely critical to the food processing industry. Currently, the USDA has facility-by-facility approval authority of what food processing equipment is to be allowed in the USDA controlled facility. Currently, the equipment that is approved by one inspector in one facility may not be accepted by a different inspector at a different facility. This makes standardization of equipment design and manufacture almost impossible. With this family of voluntary standards, all inspectors at least have a legitimate baseline for equipment inspection and acceptance. The manufacturer's also have a legitimate baseline from which to work.

Submitted by

R. Greer, Wire Belt Company of America

ISO 10303

*STEP Industrial automation systems and integration --
Product data representation and exchange*

It allows design and manufacturing companies to exchange data such as CAD, CAM, CAE, and PDM.

Submitted by
Phil Rosche, ICF Consulting

ISO 10303

*Industrial automation systems and integration --
Product data representation and exchange*

ISO 10303 (STEP) provides a critical capability to exchange intelligent product data between LM and their suppliers/partners. With the advent of sophisticated IT systems to design and define product, the use of STEP to retain the intelligence from these systems and convey them to dissimilar systems is essential. STEP offers an excellent solution for this. LM uses STEP for CAD/CAM data, Engineering Analysis, Product Data Management (PDM) as well as Technical Data Package exchanges.

Submitted by

Jeff Holmlund

Lockheed Martin Aeronautics Company

ISO 10303

*Industrial automation systems and integration --
Product data representation and exchange*

1. Builds common understanding of product data among trading partners.
2. Exchange product data among computer applications that support development, manufacturing & service of products.
3. Guides in creation of data bases used by computer applications that support products' life-cycle.
4. Guides in creation of computer applications that support development, manufacturing & service of products.

Submitted by

Raj Birla, Ford Motor Company

ISO 10303

Industrial automation systems and integration -- Product data representation and exchange

The ISO 10303 standard is being used daily by companies both in the US and Europe to exchange Product Data Management and technical CAD data today. It works is being utilized by industry (ISO 10303-AP203 is available on every major Mechanical CAD systems and many small systems, PDM Schema is available on many major PDM systems, and ISO 10303-AP210 for electrical CAD is available for Zuken and Mentor CAD systems. This standard provides data exchange models for product meta data, mechanical data, electro-mechanical assembly data, systems engineering data, and analysis data. ISO 10303 is developed using the Express modeling language one of the most powerful and flexible object oriented modeling languages available today. OMG through Computer World and Object World has awarded Best use of Object Technology within an enterprise or large systems environment and Best distributed application using object technology Object Application Awards to the Pre-Competitive Advanced Manufacturing Process (PreAMP) and Team Integrated-Electronic Response (TIGER) projects using ISO 10303 applications.

Submitted by

Kenneth D. Buchanan, Project Manager,
ICF Consulting

ISO 10303

*Industrial automation systems and integration --
Product data representation and exchange*

This is an emerging standard to allow industry to exchange technical data between engineers in CAD/CAM/PDM and related fields. This standard will replace paper for exchange of information that has typically contained on a drawing.

Submitted by

Greg A. Paul

Lockheed Martin Aeronautics Company

ISO 10303

Industrial automation systems and integration -- Product data representation and exchange

The ISO 10303 family of standards are enabling major paradigm shifts in industry today. For decades, manufacturing industries struggled to implement more efficient and effective approaches to design and manufacturing that relied on seamless information flows among disciplines and functional areas. Concepts such as Concurrent Engineering, Collaborative Product Development, and Integrated Product Process Development are achievable using ISO 10303: (STEP). The pursuit of effective data exchange using STEP has led to improvements in CAD system core modeling algorithms, model development practices, and overall product data quality. Furthermore, data exchange using the international STEP standard has helped to foster global collaborations, as well as improve communications with supply chains. Industry continues to invest in the development of STEP, and industry will continue to benefit from this "most valuable" standard.

Submitted by

Dr. Gerry Graves, Vice President, Advanced Technology Institute

ISO 10303

*Industrial automation systems and integration --
Product data representation and exchange*

The standard provides a common information backbone for exchanging and sharing data between diverse engineering computing systems across a virtual enterprise, throughout the supply chain and throughout the entire product lifecycle. It protects business investment in information from changes in IT technology.

Submitted by

Howard Mason, BAE SYSTEMS

ISO 10303

Industrial automation systems and integration -- Product data representation and exchange

STEP is by far the most important standard in the world for the exchange and management of product information in all sectors of manufacturing. STEP supports the exchange of computer-aided design, analysis, and manufacturing information between tools of different vendors, and enables the intelligent management of the information in databases and Product Data Management (PDM) systems. In addition, STEP is developing capabilities to support systems engineering information across all engineering disciplines and all stages of the product life cycle. A list of the U.S. companies investing in STEP is a veritable who's who of the manufacturing industry, as well as NASA and the DoD.

Submitted by

Stephen C. Waterbury, NASA/GSFC

ISO 10303

Industrial automation systems and integration -- Product data representation and exchange

This standard provides a common method of defining product data that can be easily interpreted and used by any application throughout the life cycle of the product. STEP is suitable for the standardized exchange of product data through files and via the sharing and archiving of product data in databases (e.g., relational, object oriented and knowledge-based). In the present engineering/manufacturing environment, the majority of design and manufacturing activities are tied to vendor proprietary formats making the exchange of information difficult. STEP was developed as a product exchange standard. Its strength is its ability to store information relating to the entire product data spectrum. As mechanical and electrical tool vendors completed their support for STEP, the ability to transfer data between electrical and mechanical systems will become commonplace. Thermal, vibration, testability, productability and other analysis software are likely to become available from vendors that will support STEP. When electrical, mechanical, analysis, cost, manufacturing and PDM data exist in a single repository, some very interesting enterprise questions can be asked. Such as, can we build it and how much will it cost.

Submitted by

Gregory L. Smith, Technical Fellow, Boeing Integrated Defense Systems

ISO 10303

*Industrial automation systems and integration --
Product data representation and exchange*

Provides a data capture mechanism that spans the Design/Manufacturing/Engineering disciplines. It supports the data that exists in several independent standards but combines them along with their critical configuration management and product data management associations, i.e., version control, change management, etc.

Submitted by

Tom Mack, Senior Manager,
MSC.Software, Inc.

ISO 10303

Industrial automation systems and integration -- Product data representation and exchange

ISO 10303 is an International Standard for representing the physical and functional characteristics of a product throughout its life cycle in computer interpretable form. The development of STEP is a multi-national effort, with worldwide participation from industry, government, and academia. STEP provides the capability for organizations with diverse software tools to represent, exchange, and archive data for CAD, CAM, CAE, and PDM, in a neutral and openly documented format. STEP is endorsed (and even required) by leading organizations in aerospace, the automotive industry, shipbuilding, and DoD, such as Boeing, Lockheed Martin, Raytheon, IBM, BAE Systems, Newport News Shipbuilding, Electric Boat Corporation, Rockwell, and NASA. DoD has recently acknowledged that STEP is now the standard of choice and is to be accommodated throughout DoD1. By improving interoperability in product design, manufacturing, and support, STEP enables manufacturers to improve quality and productivity while reducing costs and time-to-market. STEP is widely deployed for CAD data exchange, and it is now emerging as a viable standard for exchanging PDM data. ISO 10303 addresses a wide variety of data exchange, including FEA, CAD, PDM, Electro-Mechanical, and shipbuilding.

Submitted by

Mike Stiteler, ATIPDT

ISO 10303

Industrial automation systems and integration -- Product data representation and exchange

Product Data Exchange standards provide the glue for integrating the multi-disciplinary, multi-vendor environments that are crucial for the execution of an Aerospace enterprise. ISO 10303 (STEP) provides the ability to plug-and-play CAD/CAE/CAM/PDM tools minimizing the investment in tool integration.

Submitted by

Keith Huntten

Lockheed Martin Aeronautics

ISO 10303

Industrial automation systems and integration -- Product data representation and exchange

STEP Standards (ISO 10303) provides the capability to exchange product data between companies. AP232 has proved to be particularly effective in exchanging product data between companies PDM systems.

Submitted by

Floyd Ganus, Information Technologist,
Northrop Grumman Information Tech.

ISO 10303

Industrial automation systems and integration -- Product data representation and exchange

I think the most important thing is this standard (STEP) is well classified. When reading a STEP file, you know what you need to do. Comparing to other standards like IGES, you don't need to worry about what the original intention was in the sending system. For instance, exchange of an assembly between two different CAD systems. In IGES, there are many ways to represent an assembly and different systems may have different ways of doing it. This is pretty confusing. Not a problem in STEP. I hope STEP will be the most commonly used standard for data exchange in the future.

Submitted by

Joe Ding, Project Leader, Solidworks Corp

ISO 10303

Industrial automation systems and integration – Product data representation and exchange

ISO 10303 provides the framework for allowing any number of business partners to share product data across diverse application platforms resulting in each business partner being able to tailor their processes with the most cost effective tools and avoid having to buy and maintain a different set of software tools to support each of their business partners. ISO 10303 & #8217's core product data semantics is harmonized across a large varieties of industries and countries which provides greater potential for global benefits. ISO 10303 can handle the exchange of product information between Product Data Management (PDM) systems and CAD/CAM/CAE systems. The overall economy will benefit when large companies start using ISO 10303 in place of paper drawings to exchange with small Mom and Pop Suppliers. Industry and the Government as a whole can utilize ISO 10303 to enable standard product data delivery and collaborative development of products in a virtual enterprise environment. ISO 10303 is setup to utilize the World Wide Web to transport and access product data among business partners thus providing benefits globally.

Submitted by

Glen Ziolko

Northrop Grumman Information Tech.

ISO 10303 and ISO 14649 STEP

Industrial automation systems and integration -- Product data representation and exchange

This standard allows interoperability between disparate Computer Aided Design (CAD) platforms, Computer Aided Manufacturing (CAM) platforms and enhances use of non-proprietary machine controllers. Using the international STEP standards ISO 10303 STEP and ISO 14649 STEP/NC will allow global product data interoperability saving billions of industry and government dollars.

Submitted by

Carol Tierney, General Dynamics

ISO 10303 STEP

Industrial automation systems and integration -- Product data representation and exchange

Already today the STEP standard (ISO 10303) covers many industrial activities. As implementations of STEP becomes more and more mature and missing areas are covered by new parts, STEP is going to cover most industrial processes such as design, manufacturing and maintenance.

Submitted by

Lothar Klein, Steinweg 1, LKSoft

ISO 10303 STEP

Industrial automation systems and integration -- Product data representation and exchange

STEP has been chosen by Renault for the exchange of Product Data Management data with suppliers. This allows suppliers to do part testing from a remote location using their CAD systems.

Submitted by
Christopher Veil, Renault



ISO 9000 through 9004

Quality Management Systems

Software development has become a mature industry. Standards provide for quality control and assurance management but also, and most importantly, satisfy continuity management needs in IT operations.

Submitted by

Bob Samat, Manager, IT, Audits - Internal Audits, Illinois Dept of Revenue



ISO 9001

Quality Management Systems

It gives a uniform criteria for organizations around the world, in order to provide better products to consumers. It also sets a strong basis for the implementation of any other standard (ISO 14000, SA 8000, ISO 17025, etc)

Submitted by

Sandro A. Sanchez-Paredes
Instituto para la Calidad

ANSI/ISO/ASQ Q 9001-2000

Quality Management Systems

The change in quality management system requirements from 20 "stove pipe" elements to a quality system that interconnects various and all processes in an encompassing quality system has provided organizations with an exemplary approach to utilizing the Big Q in quality; the big picture. Organizations have clear direction to excel in a more and more demanding part of their business. The new demands to think through your business from the process perspective create a more competitive attitude for everyone included in the exercise. Exactly how quality impacts the ongoing activities of the organization brings everyone in the company to common goals and a greater efficiency overall in getting things done. And, last-but-not-least the criticism from quality guru, Dr. Joseph Juran is successfully addressed. Continual improvement is now part and parcel of the challenges for the whole organization!

Submitted by

Richard B. Stump, Principal
Consultants in Quality Inc.



ANSI/NSF50

Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs

This standard permits us in requiring tested and proven equipment at public swimming pools and as a result we have efficient and safer public recreational facilities.

Submitted by

RAMESH KAPUR, NYS Dept. of Health



ANSI/UL 746

Polymeric materials

This UL Standard has provide UL and the Industry with a set of Requirements that,over the years, have significantly improved the safety of appliances especially with the proliferation of the use of Polymers in appliances.

Submitted by

Ernst Grunewald, Whirlpool Corp.

ANSI Z535 series (NEMA)

Environmental and Facility Safety Signs

Recognizing known hazards and the subsequent duty to warn others about such hazards is one of the paramount duties and responsibilities of manufacturers and facility operators. The Z535 series outlines specific, uniform, efficient and understandable rules and guidelines companies can use to not only warn of the dangers present, but also through effective warning reduce the risk of injury and potential injurious or life threatening accidents. By simplifying and standardizing the methods in which companies warn of hazards present, the labels and signs used to warn have a much more effective rate of success in preventing injuries. A well placed, well designed, clear, lucid, easily understandable warning can render a dangerous machine or environment safe and relatively harmless by simply providing the person with the information necessary for him/her to adjust or monitor his/her behavior or the surrounding situation.

Submitted by

Phil Headley, Technical Programs,
Environmental Industry Assns.

ASTM F1163

Standard Spec For Equestrian Protective Headgear

The requirement for this standard by over fifty horse-sports rules bodies, municipalities and states has decreased the serious head injury rate for child riders in particular by half. Since head injuries have been the most severe of horse-related injuries over the years, and are arguably the most potentially life-altering, this is a very significant accomplishment.

Submitted by

Drusilla E. Malavase, Chairman, Safety
Committee, New York State Horse Council

Z490.1

Criteria for Accepted Practices in Safety, Health and Environmental Training

This standard, published by the American Society of Safety Engineers (ASSE), will help make safety, health, and environmental training more effective. From a professional standpoint, consistent criteria for a basic body of knowledge is useful in order to objectively evaluate safety, health, and environmental training. When training is required, this standard should make it easier to meet the regulatory standards.

Submitted by

Mike Rochlin, Principal
Safety and Health Resources



ASHRAE Standard 15

Safety Code for Mechanical Refrigeration

Because safety in mechanical systems are key to how the industry is measured mechanical room safety for refrigeration rooms falls to that industry which hold a true interest in the safety of those in enter and maintain that system.

Submitted by

Dean Borgers, Mechanical Engineer,
ASHRAE

ARI 210/240

Unitary Air-Conditioning and Air-Source Heat Pump Equipment

This standard is a globally accepted, federally recognized, standard that contributes to the public well-being, increased productivity and energy conservation through improved indoor air quality. The standard establishes, through testing, (conformity assessment) consumer information on energy efficiency for residential and commercial central air-conditioning equipment. Ratings information allows informed consumer purchases of central AC equipment that provides a healthier environment in the home, workplace, hospitals and all areas needing improved indoor air quality, either for general purposes or special environments required for high-level medical and technological processes. It is one basis for U.S. participation in the work of ISO TC 86, Refrigeration and Air-Conditioning. The standard is recognized by the U.S. Dept. of Energy in the Energy Policy Act (EPACT), and the National Appliance Energy Conservation Act (NAECA). As such it is the basis for positive industrial/governmental cooperation in conserving energy and for an ARI equipment certification program recognized by DOE. ARI 210/240 is an excellent example of the many "values" and applications of a standard. It is a private, voluntary industrial standard that contributes to the public welfare, consumer awareness, personal comfort, productivity and energy efficiency, and cements a positive working relationship with federal and state governments.

Submitted by

James Walters, Director, International Standards, Air-Conditioning and Refrigeration Institute

ANSI T1.631-1993

High Probability of Completion HPC Network Capability

When terrorists attacked our nation on 9-11, many of us were frantically trying to place telephone calls. Despite a flood of telecommunications network traffic, more than 18,000 high-priority government emergency calls were successfully completed thanks in part to ATIS' Standards Committee T1 Standard T1.631. This standard made it possible for Government Emergency Telecommunications Service (GETS) callers to successfully complete calls in the presence of extreme chaos and a severely congested network. T1.631 is intended to give authorized government users a preference in the public telephone system when placing emergency calls in a highly congested network. Long before 9-11, the White House tasked the Office of the Manager, National Communications System (OMNCS), to ensure that a survivable and enduring NS/EP telecommunications capability was available during national emergencies. It endorsed the development and adoption of a standard to support increased call completion capabilities for critical users; thus Standards Committee T1 developed T1.631 for implementation in the PSTN.

Submitted by

Stuart Goldman, ATIS Standards Committee T1

ANSI/SCTE 35 2001

Digital Program Insertion Cueing Message for Cable

Digital program insertion standards are very important. Cable television systems carry network programming from both traditional “over the air” networks such as ABC or CBS as well as cable-only networks such as HBO or ESPN. These networks carry national advertising, but the opportunity also exists for cable operators to sell local advertising – and with the new cable systems, that means digital. So participants in the SCTE standards program have been developing the protocols needed to insert local programming into the network digital program streams. At the end of last year SCTE approved *SCTE 35 2001*. In August, Cox Communications announced that by using SCTE 35 it had “successfully opened its digital tier of channels to local advertisers in Orange County” and was “running live, revenue-generating ads on the digital tier and breaking new ground in cable advertising.” One of the goals of interoperability standards is to enhance the ability of firms to conduct business. SCTE 35 has enabled a completely new business opportunity, with new revenues; without the standard, this opportunity would not exist. So standards do make a difference – to the advertisers, to the consumer, and to the cable operator.

Submitted by

Stephen P. Oksala, VP, Standards, Society of Cable Telecommunications Engineers

ANSI Standard T1.801-03-1996

Digital Transport of One-Way Video Signals – Parameters for Objective Performance Assessment

Digital video systems are rapidly replacing traditional analog systems, enabling the creation of new video communication and distribution services that will play an increasingly important role in the U.S. and world economies. To realize these opportunities, service and equipment providers need objective ways of assessing the performance of the digital video transmission systems they specify, deploy, operate, and maintain. Users need such metrics to objectively compare alternative service offerings. In response to this need T1.801.03-1996 has been developed. This standard defines an objective, computer-based method for measuring the end-to-end quality of digitally transmitted video signals. The standardized method accurately estimates the subjective "picture quality" judgments of human viewer panels by extracting and comparing perception-based features that can be easily communicated through separate low bandwidth channels. This enables the measurements to be made in service, using the actual video being communicated. Such "in-service" measurement is essential because the performance of digital video systems depends strongly on dynamic characteristics of the input video and the digital transmission system.

Submitted by

Neal Seitz, Vice Chair, T1A1, ATIS Standards Committee T1

ANSI Standard T1.518-1998

Objective Measurement of Telephone Band Speech Quality Using Measuring Normalizing Blocks (MNBs)

Equipment manufacturers, service providers, and communications customers all have an interest in optimizing the delivered quality of transmitted speech signals. But complex, time-varying interactions among signal content, source coding, channel coding, and channel impairments have made it difficult to define or measure speech signal quality in modern digital communication systems. In response, T1.518-1998 has been developed, which defines an objective, computer-based method for measuring the end-to-end quality of digitally transmitted speech. The T1 standardized technique, which uses signal processing algorithms called “Measuring Normalizing Blocks,” can accurately predict the subjective evaluations of human listener panels under a wide range of speech coding and transmission conditions. The MNB algorithms work by modeling human hearing and judgment. A psychoacoustic frequency scale and a model for nonlinear loudness growth are included in the hearing model. The judgment model involves measuring and normalizing spectral deviations at multiple time and frequency scales.

Submitted by

Neal Seitz, Vice Chair, T1A1, ATIS Standards Committee T1

ANSI Standard T1.413-1998

Network to Customer Installation Interfaces - Asymmetric Digital Subscriber Line (ADSL) Metallic Interface

Asymmetric Digital Subscriber Line (ADSL) is one variation of Digital Subscriber Line (DSL) and is the most widely used variation of DSL service for residential households. ADSL is considered asymmetric because the download speed is faster than the upload speed, just the kind of trade-off people need for browsing the web. Generally, more time is spent downloading information than uploading; therefore, ADSL provides customers with optimal data download speed. T1.413 is the enabling standard that allows vendors to build the equipment and service providers to offer the service that has made ADSL the attractive choice for Internet access for millions of households across the United States. This interface standard defines the necessary set of requirements that provides data transmission between the telecommunications network and the customer premises while allowing simultaneous use of telephone service on the same line.

Submitted by

Rick Townsend, Chairman, T1E1, ATIS' Standards Committee T1

Z87 Protective Eyewear

Practice for Occupational and Educational Eye and Face Protection

There is a big difference between wearing prescription glasses or sunglasses and wearing protective eyewear. Most people do not immediately recognize the additional protection afforded by glasses that are designed to meet the Z87 standard for protection. We require all employees to wear glasses that meet or exceed this standard and purchase the prescription glasses for employees. I am confident that the policy has prevented many minor eye injuries and more than a few injuries that could have resulted in permanent vision impairments.

Submitted by

Terry Andrew Geis, CSP, Health and Safety Manager,
American Ecology Corporation

Z80.3

Ophthalmics - Nonprescription Sunglasses and Fashion Eyewear - Requirements

Since many people buy non-prescription eyewear without consulting eye care professionals, this standard is necessary to protect the eyesight of the people using them. Z80.3 focuses on consumer safety, specifying the criteria for quality that the consumer would not be able to assess on their own. An example is that consumers are not always aware what the sunglasses protection level from ultraviolet radiation and other types of radiation are, and that the necessary level of this protection depends on how the sunglasses are made and used part-time or full time in sun use. It would also insure that industries using these glasses conform to the necessary standards of eye protection safety.

Submitted by

Dr. Terrance Hutchinson, U.S. Borax, Inc.

Industrial Eye Protection

This standard provides information to make sound decisions on eyewear purchases in industrial applications. In my past employment with a municipal wastewater plant, I was both a chemist and the person responsible for researching and ordering safety equipment for my co-workers. I wanted to supply them with appropriate eyewear for the specific tasks each was performing.. I knew if the product met ANSI requirements then it was one of quality and reliability and could be trusted to provide the protection needed to protect one's valuable eyesight.

Submitted by
Lisa Adams, student

17000 series: 17025

General requirements for the competence of testing and calibration laboratories

17025 provides global criteria for accreditation of laboratories which enables agreements among accreditation bodies to accept each other's results as equivalent and this facilitate trade.

Submitted by
Peter Unger, A2LA

ANSI/ESD S20.20 –1999:

Development of an Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)

This standard is a replacement for Mil-Std 1686 for and ESD control program. From this, a certification program is available that will allow government and public sector contractors the ability to fulfill contractual requirements for ESD. This standard is also being used in Europe, Asia and North America with this program. It is also the basis for a new IEC standard 63140-5-1.

Submitted by

John Kinnear, Advisory
Engineer, IBM

ASTM D 1655

Standard Specification for Aviation Turbine Fuels

When your plane takes off in New York and lands in Venezuela, refueling in Venezuela is not a problem because an ASTM specification for aviation fuel is used around the world to ensure the consistent quality and safety of the fuel. Developed over 40 years ago, ASTM D 1655 has been revised more than 30 times and has proven itself as an integral part of the worldwide purchase and use of aviation turbine fuel. It is part of the reason a jet can refuel just about anywhere in the world and be assured of quality, safety, and availability. D 1655 defines specific types of aviation turbine fuels for civil use and provides minimum requirements for them. New turbines are designed to operate on fuel meeting its requirements and manufacturers use D 1655 to certify their engines and equipment for flight. As a result, about half of the commercial jet fuel in the world is purchased in accordance with the requirements of D 1655.

Submitted by

Barbara Schindler

ASTM International