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Information technology — Year 2000 terminology

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Abstract: This standard provides concepts, definitions, remediation techniques, and other supporting terms fundamental to a lexicon for Year 2000 terminology. It addresses key topics pertinent to the development of resolutions to the Year 2000 problem. The core of this standard is the definitions Clause which contains the definition for Year 2000 compliance. Two critical aspects of this definition are: first, the acknowledgment of the significance of documentation associated with technology, and, second, the recognition that compliance is a two-way street, i.e., the proper exchange of date data is paramount for technology to remain compliant.

Keywords: date exchange, remediation techniques, Year 2000 compliant

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International Standard ISO/IEC 16509 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 22, *Programming languages, their environments and system software interfaces*.

Annexes A to C of this International Standard are for information only.

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This introduction provides background on the rationale used to develop this international standard. This information is meant to aid in the understanding and usage of this standard.

This international standard addresses the key industry concern over the existence of multiple terms and lexicons that carry varied meanings. IEEE has designed this standard to assist individuals and organizations in their efforts to develop Year 2000 solutions. Having a base-line set of terms and definitions that can serve as a foundation for such efforts is vital.

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Note that editorial changes were made to the IEEE standard to accommodate concerns raised during the ISO/IEC/JTC 1 balloting process. These are indicated in the text by a change bar (such as shown at the left of this paragraph.)

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Information technology—Year 200 terminology

1. Overview

The Year 2000 issue appears to be a simple problem that is intuitively understood. However, when examined closely, the solutions are varied and complex in nature. The essence of this problem is the representation of the year as a two-digit number in hardware and software elements of computer systems and other technologies. This representation may, for example, cause hardware or software malfunctions to occur when a system date or application date crosses the year 2000 boundary (whether that is the actual arrival of the date or for date processing purposes) or when the system or application must refer to a date that occurs on, before, or after 1 January 2000. These malfunctions can include the following:

- Incorrect arithmetic calculation, comparison, sorting, or sequencing resulting in the failure of logical, relational, and set-membership operations;
- Incorrect recognition of leap year;
- Conflict with values in data fields used for non-date purposes, e.g., “no date provided,” or “never expires”; and
- Date data field overflow.

The two-digit date may not be the sole cause of these malfunctions. They may also result from poor programming practices or a lack of full understanding of the Gregorian calendar. The consequences of these malfunctions could range from immediate system failures to more insidious long-term data corruptions.

The impact of the Year 2000 problem is potentially significant to virtually any segment of the global digital infrastructure and the economies it supports. Among the environments in which critical applications may be affected by Year 2000 issues are:

- Bio-medical
- Telecommunications/transportation
- Finance/banking
- Aviation/aerospace
- National security/law enforcement
- Other critical infrastructure

As this standard is being prepared, many organizations are in various stages of addressing this problem. Some are just beginning to assess the impact on their own information technology (IT) environments. Others