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Information technology — Portable Operating System Interface (POSIX®) Base Specifications, Issue 7

TECHNICAL CORRIGENDUM 2

Technologies de l'information — Spécifications de base de l'interface pour la portabilité des systèmes (POSIX®), Issue 7

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Institute of Electrical and Electronics Engineers, Inc
3 Park Avenue, New York
NY 10016-5997, USA

stds.ipr@ieee.org
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(Corrigendum to
IEEE Std 1003.1-2008)

The Open Group Technical Standard
Base Specifications, Issue 7

IEEE Standard for Information Technology—Portable Operating System Interface (POSIX®)

Base Specifications, Issue 7—Technical Corrigendum 2

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Approved 30 June 2016

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IEEE Std 1003.1™-2008/Cor 2-2016
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Base Specifications, Issue 7—Technical Corrigendum 2

Abstract: Problems discovered since the approval of IEEE Std 1003.1-2008 and IEEE Std 1003.1-2008/Cor 1-2013 are addressed.

Keywords: API, application program interface, argument, asynchronous, basic regular expression, batch job, batch system, BRE, built-in utility, byte, child, command language interpreter, CPU, ERE, extended regular expression, FIFO, file access control mechanism, IEEE 1003.1™, input/output, I/O, job control, network, portable operating system interface, POSIX®

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Participants

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Nicholas M. Stoughton, *Organizational Representative, ISO/IEC JTC 1/SC22*
Roger Faulkner, *Organizational Representative, The Open Group*

Cathy Fox, *Technical Editor*

Austin Group Technical Reviewers

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Eric Blake
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Mark S. Brown
Milan Cermak
Stephane Chazelas
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Geoff Clare
David Clissold
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Bogdan Barbu
David Bartley
Steve Bartolomei
Fabrice Bauzac
Guido Berhoerster
Eric Blake
Harvey Block
Hans Boehm
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S. R. Srinivasan

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Introduction

This introduction is not part of IEEE Std 1003.1-2008/Cor 2, IEEE Standard for Information Technology—Portable Operating System Interface (POSIX®)/Base Specifications, Issue 7—Technical Corrigendum 2 .

This Technical Corrigendum addresses issues raised in defect reports and interpretation requests submitted up to 24 August 2015 that meet all of the following criteria:

a) They are in the scope of the approved standard.

b) They contain no new APIs (functions/utilities); however, they may add enumeration symbols, non-function #defines, and reserve additional namespaces.

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1. Changes to the Front Matter

This section contains the set of changes to the text of the front matter.

[*Note to reviewers: References to defect reports are provided to aid reviewers.*]

Change Number: Front Matter/TC2/D4/0001 [885]

On Page: xlv Line: NA Section: Referenced Documents
(2013 edition Page: xlvii Line: NA)

In the line below the **Source Documents** header, change from:

base documents for POSIX.1-2008

to:

base documents for POSIX.1-2001

Rationale: Austin Group Defect Report(s) applied: 885. See http://austingroupbugs.net/view.php?id=885.

Change Number: Front Matter/TC2/D4/0002 [726]

On Page: xxxviii Line: NA Section: Acknowledgements

Remove the period from the first bullet list item.

Rationale: Austin Group Defect Report(s) applied: 726. See http://austingroupbugs.net/view.php?id=726.
Editorial change.

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2. Changes to Base Definitions

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Change Number: XBD/TC2/D4/0001 [591]

On Page: 9 Line: 266 Section: 1.7.1 Codes

Change from:

```
[OH]#include <sys/types.h>[/OH]
#include <grp.h>
struct group *getgrnam(const char *name);
```

The OH margin legend indicates that the marked header is not required on XSI-conformant systems.

to:

```
[OH]#include <sys/stat.h>[/OH]
#include <fcntl.h>
int open(const char *path, int oflag, ...);
```

The OH margin legend indicates that the optional header defines constants that will be needed if the function is called with certain flag arguments; thus it may be required for some of the functionality described, but is not needed otherwise.

Rationale: Austin Group Defect Report(s) applied: 591. See http://austingroupbugs.net/view.php?id=591.

Change Number: XBD/TC2/D4/0002 [810]

On Page: 16 Line: 493 Section: 2.1.1 Requirements

At the end of section 2.1.1, add a small-font note:

Note: If the documented method of setting up a conforming environment includes the need to set one or more environment variables, then the values of those environment variables cannot include any <space> characters, since the *confstr*() function must be able to return them in a <space>-separated list of variable=value pairs. See [xref to XSH confstr()].

Rationale: Austin Group Defect Report(s) applied: 810. See http://austingroupbugs.net/view.php?id=810.

Change Number: XBD/TC2/D4/0003 [637]

On Page: 17 Line: 561 Section: 2.1.3 POSIX Conformance

Change from:

```
    _POSIX_TIMERS

-- Symbolic constants defined with a value greater than zero:
```


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```
    _POSIX_JOB_CONTROL
    _POSIX_SAVED_IDS
```

to:

```
    _POSIX_TIMERS
    _POSIX2_C_BIND

-- Symbolic constants defined with a value greater than zero:
    _POSIX_JOB_CONTROL
    _POSIX_REGEXP
    _POSIX_SAVED_IDS
    _POSIX_SHELL
```

Rationale: Austin Group Defect Report(s) applied: 637. See http://austingroupbugs.net/view.php?id=637.

Change Number: XBD/TC2/D4/0004 [937]

On Page: 35 Line: 1195 Section: 3.17 Application
(2013 edition Page: 35 Line: 1199)

After:

A computer program that performs some desired function.

add a new paragraph:

When the User Portability Utilities option is supported, requirements placed on applications relating to the use of standard utilities shall also apply to the actions of a user who is entering shell command language statements into an interactive shell.

Rationale: Austin Group Defect Report(s) applied: 937. See http://austingroupbugs.net/view.php?id=937.

Change Number: XBD/TC2/D4/0005 [516]

On Page: 37 Line: 1229 Section: 3.27 Async-Signal-Safe Function

Change the definition from:

A function that may be invoked, without restriction, from signal-catching functions. No function is async-signal-safe unless explicitly described as such.

to:

A function that can be called, without restriction, from signal-catching functions. Note that, although there is no restriction on the calls themselves, for certain functions there are restrictions on subsequent behavior after the function is called from a signal-catching function. No function is async-signal-safe unless explicitly described as such.

Note: Async-signal-safety is defined in detail in [xref to XSH 2.4.3].

Rationale: Austin Group Defect Report(s) applied: 516. See http://austingroupbugs.net/view.php?id=516.
The restrictions on using longjmp() and siglongjmp() are more restrictive than they need to be on POSIX

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systems. The loosened restrictions presented here do not break existing implementations and make it easier for application writers to create portable applications.

Change Number: XBD/TC2/D4/0006 [653]

On Page: 39 Line: 1274 Section: 3.40 Basename

Change from:

The final, or only, filename in a pathname.

to:

For pathnames containing at least one filename: the final, or only, filename in the pathname. For pathnames consisting only of <slash> characters: either "/" or "//" if the pathname consists of exactly two <slash> characters, and "/" otherwise.

Rationale: Austin Group Defect Report(s) applied: 653. See http://austingroupbugs.net/view.php?id=653.

Change Number: XBD/TC2/D4/0007 [834]

On Page: 60 Line: 1775 Section: 3.168 File Mode

Change from:

An object containing the file mode bits and file type of a file.

to:

An object containing the file mode bits and some information about the file type of a file.

Rationale: Austin Group Defect Report(s) applied: 834. See http://austingroupbugs.net/view.php?id=834.

Change Number: XBD/TC2/D4/0008 [511]

On Page: 63 Line: 1855 Section: 3.188 Group ID

Add a sentence:

The value (**gid_t**)-1 shall not be a valid group ID, but does have a defined use in some interfaces defined in this standard.

Rationale: Austin Group Defect Report(s) applied: 511. See http://austingroupbugs.net/view.php?id=511.

Change Number: XBD/TC2/D4/0009 [584]

On Page: 63 Line: 1859 Section: 3.189 Group Name

Change from:

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<hyphen>

to:

<hyphen-minus>

Rationale: Austin Group Defect Report(s) applied: 584. See http://austingroupbugs.net/view.php?id=584.

Change Number: XBD/TC2/D4/0010 [690]

On Page: 66 Line: 1926 Section: 3 Definitions
(2013 edition Page: 66 Line: 1935)

After section 3.208 ("Link Count"), insert a new section **3.209 Live Process** whose contents are copied from section 3.289 ("Process") page 80 lines 2243-2250 (2013 edition section 3.291 page 80 lines 2269-2275):

An address space with one or more threads executing within that address space, and the required system resources for those threads.

<small>**Note:** Many of the system resources defined by POSIX.1-2008 are shared among all of the threads within a process. These include the process ID, the parent process ID, process group ID, session membership, real, effective, and saved set-user-ID, real, effective, and saved set-group-ID, supplementary group IDs, current working directory, root directory, file mode creation mask, and file descriptors.</small>

Rationale: Austin Group Defect Report(s) applied: 690. See http://austingroupbugs.net/view.php?id=690.

Change Number: XBD/TC2/D4/0011 [625]

On Page: 69 Line: 2000 Section: 3 Definitions

Add the following definitions in alphabetical order:

Multi-threaded library

A library containing object files that were produced by compiling with *c99* using the flags output by `getconf POSIX_V7_THREADS_CFLAGS`, or by compiling using a non-standard utility with equivalent flags, and which makes use of interfaces that are only made available by *c99* when the **-l pthread** option is used or makes use of SIGEV_THREAD notifications.

Multi-threaded process

A process that contains more than one thread.

Multi-threaded program

A program whose executable file was produced by compiling with *c99* using the flags output by `getconf POSIX_V7_THREADS_CFLAGS`, and linking with *c99* using the flags output by `getconf POSIX_V7_THREADS_LDFLAGS` and the **-l pthread** option, or by compiling and linking using a non-standard utility with equivalent flags. Execution of a multi-threaded program initially creates a single-threaded process; the process can create additional threads using *pthread_create*() or SIGEV_THREAD

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notifications.

Single-threaded process

A process that contains a single thread.

Single-threaded program

A program whose executable file was produced by compiling with *c99* without using the flags output by `getconf POSIX_V7_THREADS_CFLAGS` and linking with *c99* using neither the flags output by `getconf POSIX_V7_THREADS_LDFLAGS` nor the **-l pthread** option, or by compiling and linking using a non-standard utility with equivalent flags. Execution of a single-threaded program creates a single-threaded process; if the process attempts to create additional threads using *pthread_create*() or SIGEV_THREAD notifications, the behavior is undefined. If the process uses *dlopen*() to load a multi-threaded library, the behavior is undefined.

Rationale: Austin Group Defect Report(s) applied: 625. See http://austingroupbugs.net/view.php?id=625. The standard does not adequately address the differences between single-threaded and multi-threaded processes and programs.

Change Number: XBD/TC2/D4/0012 [584]

On Page: 77 Line: 2193 Section: 3. Definitions

After Section 3.275, add a new section:

3.2xx Portable Filename

A filename consisting only of characters from the portable filename character set.

<small>Note: Applications should avoid using filenames that have the <hyphen-minus> character as the first character since this may cause problems when filenames are passed as command line arguments.</small>

Rationale: Austin Group Defect Report(s) applied: 584. See http://austingroupbugs.net/view.php?id=584. This is a layered change on XBD/TC1/D5/0010 [291]. The change is to replace <hyphen> with <hyphen-minus>.

Change Number: XBD/TC2/D4/0013 [584]

On Page: 77 Line: 2199 Section: 3.276 Portable Filename Character Set

Change from:

<hyphen>

to:

<hyphen-minus>

Rationale: Austin Group Defect Report(s) applied: 584. See http://austingroupbugs.net/view.php?id=584.

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Change Number: XBD/TC2/D4/0014 [690]

On Page: 80 Line: 2244-2250 Section: 3.289 Process
(2013 edition Page: 80 Line: 2269-2275 Section: 3.291)

Replace the definition with:

A live process (see Section 3.xxx) or a zombie process (see Section 3.xxx). The lifetime of a process is described in Section 3.xxx.

On Page: 81 Line: 2270-2279 Section: 3.295 Process Lifetime
(2013 edition Page: 81 Line: 2295-2304 Section: 3.297)

Change from:

The period of time that begins when a process is created and ends when its process ID is returned to the system. After a process is created by *fork*(), *posix_spawn*(), or *posix_spawnp*(), it is considered active. At least one thread of control and address space exist until it terminates. It then enters an inactive state where certain resources may be returned to the system, although some resources, such as the process ID, are still in use. When another process executes a *wait*(), *waitid*(), or *waitpid*() function for an inactive process, the remaining resources are returned to the system. The last resource to be returned to the system is the process ID. At this time, the lifetime of the process ends.

<small>**Note:** The *fork*(), *posix_spawn*(), *posix_spawnp*(), *wait*(), *waitid*(), and *waitpid*() functions are defined in detail in the System Interfaces volume of POSIX.1-2008.</small>

to:

The period of time that begins when a process is created and ends when its process ID is returned to the system.

See also *Live Process* in Section 3.xxx, *Process Termination* in Section 3.xxx, and *Zombie Process* in Section 3.xxx.

<small>**Note:** Process creation is defined in detail in the descriptions of the *fork*(), *posix_spawn*(), and *posix_spawnp*() functions in the System Interfaces volume of POSIX.1-2008.</small>

On Page: 81 Line: 2293-2294 Section: 3.297 Process Termination
(2013 edition Page: 81 Line: 2318-2319 Section: 3.299)

Change from:

<small>**Note:** The *_exit*(), *_Exit*(), *abort*(), and *exit*() functions are defined in detail in the System Interfaces volume of POSIX.1-2008.</small>

to:

<small>**Note:** The consequences of process termination can be found in the description of the *_Exit*() function in the System Interfaces volume of POSIX.1-2008. The *_exit*(), *_Exit*(), *abort*(), and *exit*() functions are defined in detail in the System Interfaces volume of POSIX.1-2008.</small>

Rationale: Austin Group Defect Report(s) applied: 690. See http://austingroupbugs.net/view.php?id=690.

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Change Number: XBD/TC2/D4/0015 [896]

On Page: 90 Line: 2485 Section: 3.351 Source Code
(2013 edition Page: 90 Line: 2510 Section: 3.353 Source Code)

Change from:

... *ed, lex,* ...

to:

... *ed, ex, lex,* ...

On Page: 90 Line: 2487 Section: 3.351 Source Code
(2013 edition Page: 90 Line: 2512 Section: 3.353 Source Code)

Change from:

... *ed, lex,* ...

to:

... *ed, ex, lex,* ...

Rationale: Austin Group Defect Report(s) applied: 896. See http://austingroupbugs.net/view.php?id=896.

Change Number: XBD/TC2/D4/0016 [511]

On Page: 102 Line: 2782 Section: 3.428 User ID

Add a sentence:

The value (**uid_t**)-1 shall not be a valid user ID, but does have a defined use in some interfaces defined in this standard.

Rationale: Austin Group Defect Report(s) applied: 511. See http://austingroupbugs.net/view.php?id=511.

Change Number: XBD/TC2/D4/0017 [584]

On Page: 102 Line: 2786 Section: 3.429 User Name

Change from:

<hyphen>

to:

<hyphen-minus>

Rationale: Austin Group Defect Report(s) applied: 584. See http://austingroupbugs.net/view.php?id=584.

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Change Number: XBD/TC2/D4/0018 [690]

On Page: 105 Line: 2845-2846 Section: 3.444 Zombie Process
(2013 edition Page: 105 Line: 2871-2872 Section: 3.446)

Change from:

A process that has terminated and that is deleted when its exit status has been reported to another process which is waiting for that process to terminate.

to:

The remains of a live process (see Section 3.xxx) after it terminates (see Section 3.xxx) and before its status information (see XSH Section 2.13) is consumed by its parent process.

Rationale: Austin Group Defect Report(s) applied: 690. See http://austingroupbugs.net/view.php?id=690.

Change Number: XBD/TC2/D4/0019 [934]

On Page: 107 Line: 2858 Section: 4 General Concepts
(2013 edition Page: 107 Line: 2884)

Add a new section (and renumber subsequent sections as needed):

4.2 Default Initialization

Default initialization causes an object to be initialized according to these rules:

- If it has pointer type, it is initialized to a null pointer.
- If it has arithmetic type, it is initialized to (positive or unsigned) zero.
- If it is an aggregate, every member is initialized (recursively) according to these rules.
- If it is a union, the first named member is initialized (recursively) according to these rules.

For an object of aggregate type with an explicit initializer, the initialization shall occur in initializer list order, each initializer provided for a particular subobject overriding any previously listed initializer for the same subobject; all subobjects that are not initialized explicitly shall be initialized implicitly according to the rules for default initialization.

Objects with static storage duration but no explicit initializer shall be initialized implicitly according to the rules for default initialization.

An explicit initializer of `{ 0 }` works to perform explicit default initialization for any object of scalar or aggregate type, and for any storage duration.

<small>Note: The C standard does not require a compiler to set any field alignment padding bits in a structure or array definition to a particular value. Because of this, a structure initialized using `{ 0 }` might not *memcmp*() as equal to the same structure initialized using *memset*() to zero. For consistent results, portable applications comparing structures should test each field individually.

Note: If an implementation treats the all-zero bit pattern of a pointer object as a null pointer, and the all-zero bit pattern of a floating point object as equivalent to positive 0, then *memset*() to zero and *calloc*() have the same effects as default initialization for all named members of a structure. [MX]Implementations

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that define __STDC_IEC_559__ guarantee that the all-zero bit pattern of a floating point object represents 0.0.[/MX]</small>

Rationale: Austin Group Defect Report(s) applied: 934. See http://austingroupbugs.net/view.php?id=934.

Change Number: XBD/TC2/D4/0020 [584]

On Page: 109 Line: 2914 Section: 4.7 Filename Portability

Change from:

<hyphen>

to:

<hyphen-minus>

Rationale: Austin Group Defect Report(s) applied: 584. See http://austingroupbugs.net/view.php?id=584.

Change Number: XBD/TC2/D4/0021 [626]

On Page: 109 Line: 2917 Section: 4.8 File Times Update

Insert a new paragraph at the start of the section:

Many operations have requirements to update file timestamps. These requirements do not apply to streams that have no underlying file description (for example, memory streams created by *open_memstream*() have no underlying file description).

Rationale: Austin Group Defect Report(s) applied: 626. See http://austingroupbugs.net/view.php?id=626.

Change Number: XBD/TC2/D4/0022 [863]

On Page: 110 Line: 2980 Section: 4.11 Memory Synchronization
(2013 edition Page: 110 Line: 3004)

Change from:

The *pthread_once*() function shall synchronize memory for the first call in each thread for a given **pthread_once_t** object.

to:

The *pthread_once*() function shall synchronize memory for the first call in each thread for a given **pthread_once_t** object. If the *init_routine* called by *pthread_once*() is a cancellation point and is canceled, a call to *pthread_once*() for the same **pthread_once_t** object made from a cancellation cleanup handler shall also synchronize memory.

Rationale: Austin Group Defect Report(s) applied: 863. See http://austingroupbugs.net/view.php?id=863.

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Change Number: XBD/TC2/D4/0023 [541,649,825]

On Page: 112 Line: 3026 Section: 4.12 Pathname Resolution

Change from:

In all other cases, the system shall prefix the remaining pathname, if any, with the contents of the symbolic link. If the combined length exceeds {PATH_MAX}, and the implementation considers this to be an error, *errno* shall be set to [ENAMETOOLONG] and an error indication shall be returned.

to:

In all other cases, the system shall prefix the remaining pathname, if any, with the contents of the symbolic link, except that if the contents of the symbolic link is the empty string, then either pathname resolution shall fail with functions reporting an [ENOENT] error and utilities writing an equivalent diagnostic message, or the pathname of the directory containing the symbolic link shall be used in place of the contents of the symbolic link. If the contents of the symbolic link consist solely of <slash> characters, then all leading <slash> characters of the remaining pathname shall be omitted from the resulting combined pathname, leaving only the leading <slash> characters from the symbolic link contents. In the cases where prefixing occurs, if the combined length exceeds {PATH_MAX}, and the implementation considers this to be an error, pathname resolution shall fail with functions reporting an [ENAMETOOLONG] error and utilities writing an equivalent diagnostic message.

Rationale: Austin Group Defect Report(s) applied: 541,649,825. See
http://austingroupbugs.net/view.php?id=541.
See http://austingroupbugs.net/view.php?id=649.
See http://austingroupbugs.net/view.php?id=825.
The previous text was not historic practice on implementations that support //hostname as a special case in pathname resolution. For implementations that do not treat // as special, the change in handling of all-slash symbolic links has no effect on pathname resolution.

Change Number: XBD/TC2/D4/0024 [825]

On Page: 112 Line: 3032 Section: 4.12 Pathname Resolution
(2013 edition Page: 112 Line: 3056 Section: 4.12)

Change from:

If the system detects a loop in the pathname resolution process, it shall set *errno* to [ELOOP] and return an error indication.

to:

If the system detects a loop in the pathname resolution process, pathname resolution shall fail with functions reporting an [ELOOP] error and utilities writing an equivalent diagnostic message.

Rationale: Austin Group Defect Report(s) applied: 825. See http://austingroupbugs.net/view.php?id=825.

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Change Number: XBD/TC2/D4/0025 [543]

On Page: 116 Line: 3205 Section: 4.19 Treatment of Error Conditions for Mathematical Functions

Add a new paragraph before the last paragraph:

On implementations that support the IEC 60559 Floating-Point option, whether or when functions in the <**math.h**> header raise an undeserved underflow floating-point exception is unspecified. Otherwise, as implied by [xref to XSH *feraiseexcept*()] the <**math.h**> functions do not raise spurious floating-point exceptions (detectable by the user), other than the inexact floating-point exception.

Rationale: Austin Group Defect Report(s) applied: 543. See http://austingroupbugs.net/view.php?id=543.

Change Number: XBD/TC2/D4/0026 [584]

On Page: 123 Line: 3411 Section: 5 File Format Notation

Change from:

indicates either a <plus-sign> or minus-sign),

to:

indicates either a <plus-sign> or <hyphen-minus>),

Rationale: Austin Group Defect Report(s) applied: 584. See http://austingroupbugs.net/view.php?id=584.

Change Number: XBD/TC2/D4/0027 [584,967]

On Page: 125 Line: 3454 Section: 6.1 Portable Character Set
(2013 edition Page: 125 Line: 3479)

Change from:

The first eight entries in [xref to Table 6-1] are defined in the ISO/IEC 6429:1992 standard and the rest of the characters are defined in the ISO/IEC 10646-1:2000 standard.

to:

The first eight entries in [xref to Table 6-1] and all characters in [xref to Table 6-2] are defined in the ISO/IEC 6429:1992 standard. The rest of the characters in [xref to Table 6-1] are defined in the ISO/IEC 10646-1:2000 standard.

On Page: 125 Line: 3458 Section: 6.1 Portable Character Set
(2013 edition Page: 125 Line: 3483)

Change from:

Symbolic Name

to:

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373 **Symbolic Name(s)**

374 On Page: 125 Line: 3460-3466 Section: 6.1 Portable Character Set
375 (2013 edition Page: 125 Line: 3485-3491)

376 Change from:

<alert>		<U0007>	BELL (BEL)
<backspace>		<U0008>	BACKSPACE (BS)
<tab>		<U0009>	CHARACTER TABULATION (HT)
<carriage-return>		<U000D>	CARRIAGE RETURN (CR)
<newline>		<U000A>	LINE FEED (LF)
<vertical-tab>		<U000B>	LINE TABULATION (VT)
<form-feed>		<U000C>	FORM FEED (FF)

377

378 to (note the description column changes to match the Unicode spec, and the change in line order):

<alert>, <BEL>		<U0007>	BELL
<backspace>, <BS>		<U0008>	BACKSPACE
<tab>, <HT>		<U0009>	CHARACTER TABULATION
<newline>, <LF>		<U000A>	LINE FEED (LF)
<vertical-tab>, <VT>		<U000B>	LINE TABULATION
<form-feed>, <FF>		<U000C>	FORM FEED (FF)
<carriage-return>, <CR>		<U000D>	CARRIAGE RETURN (CR)

379

380 On Page: 125 Line: 3480-3485 Section: 6.1 Portable Character Set
381 (2013 edition Page: 125 Line: 3505-3510)

382 Change from:

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<hyphen-minus>	-	<U002D>	HYPHEN-MINUS
<hyphen>	-	<U002D>	HYPHEN-MINUS
<full-stop>	.	<U002E>	FULL STOP
<period>	.	<U002E>	FULL STOP
<slash>	/	<U002F>	SOLIDUS
<solidus>	/	<U002F>	SOLIDUS

to (note that the glyph used for <hyphen-minus>, <hyphen> should be the same one that is used in the construct "('-')" in the rest of the standard):

<hyphen-minus>, <hyphen>	-	<U002D>	HYPHEN-MINUS
<full-stop>, <period>	.	<U002E>	FULL STOP
<slash>, <solidus>	/	<U002F>	SOLIDUS

On Page: 126 Line: 3531-3532 Section: 6.1 Portable Character Set
(2013 edition Page: 126 Line: 3556-3557)

Change from:

<backslash>	\	<U005C>	REVERSE SOLIDUS
<reverse-solidus>	\	<U005C>	REVERSE SOLIDUS

to:

<backslash>, <reverse-solidus>	\	<U005C>	REVERSE SOLIDUS

On Page: 126 Line: 3534-3537 Section: 6.1 Portable Character Set
(2013 edition Page: 126 Line: 3559-3562)

Change from:

<circumflex-accent>	^	<U005E>	CIRCUMFLEX ACCENT

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<circumflex>	^	<U005E>	CIRCUMFLEX ACCENT
<low-line>	_	<U005F>	LOW LINE
<underscore>	_	<U005F>	LOW LINE

395

396 to:

<circumflex-accent>, <circumflex>	^	<U005E>	CIRCUMFLEX ACCENT
<low-line>, <underscore>	_	<U005F>	LOW LINE

397

398 On Page: 127 Line: 3566-3567 Section: 6.1 Portable Character Set
399 (2013 edition Page: 127 Line: 3591-3592)

400 Change from:

<left-brace>	{	<U007B>	LEFT CURLY BRACKET
<left-curly-bracket>	{	<U007B>	LEFT CURLY BRACKET

401

402 to:

<left-brace>, <left-curly-bracket>	{	<U007B>	LEFT CURLY BRACKET

403

404 On Page: 127 Line: 3569-3570 Section: 6.1 Portable Character Set
405 (2013 edition Page: 127 Line: 3594-3595)

406 Change from:

<right-brace>	}	<U007D>	RIGHT CURLY BRACKET
<right-curly-bracket>	}	<U007D>	RIGHT CURLY BRACKET

407

408 to:

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<right-brace>, <right-curly-bracket>	}	<U007D>	RIGHT CURLY BRACKET

On Page: 127 Line: 3576-3578 Section: 6.1 Portable Character Set
(2013 edition Page: 127 Line: 3601-3603)

Delete the sentence:

The table contains more than one symbolic character name for characters whose traditional name differs from the chosen name.

Rationale: Austin Group Defect Report(s) applied: 584,967. See http://austingroupbugs.net/view.php?id=584.
See http://austingroupbugs.net/view.php?id=967.

Change Number: XBD/TC2/D4/0028 [745]

On Page: 128 Line: 3589 Section: 6.1 Portable Character Set

Add a sentence as a new bullet item:

- The encoded values associated with <period>, <slash>, <newline> and <carriage-return> shall be invariant across all locales supported by the implementation.

Rationale: Austin Group Defect Report(s) applied: 745. See http://austingroupbugs.net/view.php?id=745.
This is a layered change on XBD/TC1/D5/0019 [291].

Change Number: XBD/TC2/D4/0029 [663,967]

On Page: 128 Line: 3596 Section: 6.2 Character Encoding
(2013 edition Page: 128 Line: 3623)

Change from:

The POSIX locale contains the characters in [xref to Table 6-1], which have the properties listed in [xref to 7.3.1]. In other locales, the presence, meaning, and representation of any additional characters are locale-specific.

to:

The POSIX locale shall contain 256 single-byte characters including the characters in [xref to Table 6-1] and [xref to Table 6-2], which have the properties listed in [xref to 7.3.1]. It is unspecified whether characters not listed in those two tables are classified as **punct** or **cntrl**, or neither. Other locales shall contain the characters in [xref to Table 6-1] and may contain any or all of the control characters identified in [xref to Table 6-2]; the presence, meaning, and representation of any additional characters are locale-specific.

Rationale: Austin Group Defect Report(s) applied: 663,967. See
http://austingroupbugs.net/view.php?id=663.
See http://austingroupbugs.net/view.php?id=967.

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This is a layered change on XBD/TC1/D5/0020 [216].
The intention was always that the POSIX locale should have an 8-bit-clean single-byte encoding. The omission of an explicit statement to that effect was an oversight.

Change Number: XBD/TC2/D4/0030 [745]

On Page: 128 Line: 3619 Section: 6.2 Character Encoding

Add a sentence:

Likewise, the byte values used to encode <period>, <slash>, <newline> and <carriage-return> shall not occur as part of any other character in any locale.

Rationale: Austin Group Defect Report(s) applied: 745. See http://austingroupbugs.net/view.php?id=745.
This is a layered change on XBD/TC1/D5/0021 [291].

Change Number: XBD/TC2/D4/0031 [967]

On Page: 129 Line: 3655 Section: 6.4 Character Set Description File
(2013 edition Page: 129 Line: 3683)

Change from:

Each symbolic name specified in [xref to Table 6-1] shall be included in the file and shall be mapped to a unique coding value, except as noted below. The glyphs represented by the C character constants `'{'`, `'}'`, `'_'`, `'-'`, `'/'`, `'\\'`, `'.'`, and `'^'` have more than one symbolic name; all symbolic names for each such glyph shall be included, each with identical encoding. If some or all of the control characters identified in [xref to Table 6-2] are supported by the implementation, the symbolic names and their corresponding encoding values shall be included in the file. The encoding values shall each be represented in a single byte. Some of the encodings associated with the symbolic names in [xref to Table 6-2] may be the same as characters found in [xref to Table 6-1]; both names shall be provided for each encoding.

to:

Each symbolic name specified in [xref to Table 6-1] shall be included in the file. Each character in [xref to Table 6-1] (each row in the table) shall be mapped to a unique coding value. For each character in [xref to Table 6-2] that exists in the character set described by the file, the character's symbolic name(s) from [xref to Table 6-2] and the character's single-byte encoding value shall be included in the file.

On Page: 130 Line: 3664-3670 Section: 6.4 Character Set Description File
(2013 edition Page: 130 Line: 3692-3698)

Change from:

Table 6-2 Control Character Set

<ACK>	<DC2>	<ENQ>	<FS>	<IS4>	<SOH>
<BEL>	<DC3>	<EOT>	<GS>	<LF>	<STX>

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<BS> <DC4> <ESC> <HT> <NAK> <SUB>

<CAN> <DEL> <ETB> <IS1> <RS> <SYN>

<CR> <DLE> <ETX> <IS2> <SI> <US>

<DC1> <EM> <FF> <IS3> <SO> <VT>

474 to:

475 **Table 6-2** Non-Portable Control Characters
476

Symbolic Name(s)	UCS	Description
<SOH>	<U0001>	START OF HEADING
<STX>	<U0002>	START OF TEXT
<ETX>	<U0003>	END OF TEXT
<EOT>	<U0004>	END OF TRANSMISSION
<ENQ>	<U0005>	ENQUIRY
<ACK>	<U0006>	ACKNOWLEDGE
<SO>	<U000E>	SHIFT OUT
<SI>	<U000F>	SHIFT IN
<DLE>	<U0010>	DATA LINK ESCAPE
<DC1>	<U0011>	DEVICE CONTROL ONE
<DC2>	<U0012>	DEVICE CONTROL TWO
<DC3>	<U0013>	DEVICE CONTROL THREE
<DC4>	<U0014>	DEVICE CONTROL FOUR
<NAK>	<U0015>	NEGATIVE ACKNOWLEDGE
<SYN>	<U0016>	SYNCHRONOUS IDLE
<ETB>	<U0017>	END OF TRANSMISSION BLOCK

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<CAN>	<U0018>	CANCEL
<EM>	<U0019>	END OF MEDIUM
<SUB>	<U001A>	SUBSTITUTE
<ESC>	<U001B>	ESCAPE
<IS4>, <FS>	<U001C>	INFORMATION SEPARATOR FOUR
<IS3>, <GS>	<U001D>	INFORMATION SEPARATOR THREE
<IS2>, <RS>	<U001E>	INFORMATION SEPARATOR TWO
<IS1>, <US>	<U001F>	INFORMATION SEPARATOR ONE
<DEL>	<U007F>	DELETE

Rationale: Austin Group Defect Report(s) applied: 967. See http://austingroupbugs.net/view.php?id=967.

Change Number: XBD/TC2/D4/0032 [796]

On Page: 136 Line: 3846 Section: 7.2 POSIX Locale
(2013 edition Page: 136 Line: 3882)

After:

Conforming systems shall provide a POSIX locale, also known as the C locale.

add:

In POSIX.1 the requirements for the POSIX locale are more extensive than the requirements for the C locale as specified in the C standard. However, in a conforming POSIX implementation, the POSIX locale and the C locale are identical.

Rationale: Austin Group Defect Report(s) applied: 796. See http://austingroupbugs.net/view.php?id=796.

Change Number: XBD/TC2/D4/0033 [663]

On Page: 136 Line: 3849 Section: 7.2 POSIX locale
(2013 edition Page: 136 Line: 3885)

Delete:

The tables in Section 7.3 describe the characteristics and behavior of the POSIX locale for data consisting entirely of characters from the portable character set and the control character set. For other characters, the behavior is unspecified.

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On Page: 139 Line: 3996 Section: 7.3.1 LC_CTYPE
(2013 edition Page: 139 Line: 4032)

Change from:

In the POSIX locale, the 26 uppercase letters shall be included:

```
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
```

to:

In the POSIX locale, only:

```
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
```

shall be included.

On Page: 139 Line: 4003 Section: 7.3.1 LC_CTYPE
(2013 edition Page: 139 Line: 4039)

Change from:

In the POSIX locale, the 26 lowercase letters shall be included:

```
a b c d e f g h i j k l m n o p q r s t u v w x y z
```

to:

In the POSIX locale, only:

```
a b c d e f g h i j k l m n o p q r s t u v w x y z
```

shall be included.

On Page: 139 Line: 4009 Section: 7.3.1 LC_CTYPE
(2013 edition Page: 140 Line: 4045)

Change from:

In the POSIX locale, all characters in the classes **upper** and **lower** shall be included.

to:

In the POSIX locale, only characters in the classes **upper** and **lower** shall be included.

On Page: 141 Line: 4091 Section: 7.3.1 LC_CTYPE
(2013 edition Page: 141 Line: 4127)

Change from:

In the POSIX locale, at a minimum, the 26 lowercase characters:

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to:

In the POSIX locale, the 26 lowercase characters:

On Page: 142 Line: 4105 Section: 7.3.1 LC_CTYPE
(2013 edition Page: 142 Line: 4141)

Change from:

In the POSIX locale, at a minimum, the 26 uppercase characters:

to:

In the POSIX locale, the 26 uppercase characters:

Rationale: Austin Group Defect Report(s) applied: 663. See http://austingroupbugs.net/view.php?id=663.

Change Number: XBD/TC2/D4/0034 [663]

On Page: 143 Line: 4142 Section: 7.3.1.1 LC_CTYPE Category in the POSIX Locale
(2013 edition Page: 143 Line: 4178)

Change from:

The character classifications for the POSIX locale follow; the code listing depicts the *localedef* input, and the table represents the same information, sorted by character.

to:

The minimum character classifications for the POSIX locale follow; the code listing depicts the *localedef* input, and the table represents the same information, sorted by character. Implementations may add additional characters to the **cntrl** and **punct** classifications but shall not make any other additions.

On Page: 143 Line: 4145 Section: 7.3.1.1 LC_CTYPE Category in the POSIX Locale
(2013 edition Page: 143 Line: 4181)

Change from:

```
# The following is the POSIX locale LC_CTYPE.
# "alpha" is by default "upper" and "lower"
# "alnum" is by definition "alpha" and "digit"
# "print" is by default "alnum", "punct", and the <space>
# "graph" is by default "alnum" and "punct"
```

to:

```
# The following is the minimum POSIX locale LC_CTYPE.
# "alpha" is by definition "upper" and "lower"
# "alnum" is by definition "alpha" and "digit"
# "print" is by definition "alnum", "punct", and the <space>
# "graph" is by definition "alnum" and "punct"
```

Rationale: Austin Group Defect Report(s) applied: 663. See http://austingroupbugs.net/view.php?id=663.

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Change Number: XBD/TC2/D4/0035 [584]

On Page: 143 Line: 4173 Section: 7.3.1.1 LC_CTYPE Category in the POSIX Locale

Change from:

<hyphen>

to:

<hyphen-minus>

Rationale: Austin Group Defect Report(s) applied: 584. See http://austingroupbugs.net/view.php?id=584.

Change Number: XBD/TC2/D4/0036 [584]

On Page: 144 Line: 4243 Section: 7.3.1.1 LC_CTYPE Category in the POSIX Locale

Change from:

<hyphen>

to:

<hyphen-minus>

Rationale: Austin Group Defect Report(s) applied: 584. See http://austingroupbugs.net/view.php?id=584.

Change Number: XBD/TC2/D4/0037 [938]

On Page: 146 Line: 4330 Section: 7.3.2 LC_COLLATE
(2013 edition Page: 147 Line: 4366)

Change from:

(*sort*, *uniq*, and so on)

to:

(*ls*, *sort*, and so on)

On Page: 147 Line: 4357 Section: 7.3.2 LC_COLLATE
(2013 edition Page: 147 Line: 4393)

Add a new paragraph and two small-font notes after the numbered list:

All implementation-provided locales (either preinstalled or provided as locale definitions which can be installed later) should define a collation sequence that has a total ordering of all characters unless the locale name has an '@' modifier indicating that it has a special collation sequence (for example, `@icase` could indicate that each upper- and lower-case character pair collates equally).

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<small>Note: a future version of this standard may require these locales to define a collation sequence that has a total ordering of all characters (by changing "should" to "shall").</small>

<small>Note: users installing their own locales should ensure that they define a collation sequence with a total ordering of all characters unless an '@' modifier in the locale name (such as @icase) indicates that it has a special collation sequence.</small>

On Page: 149 Line: 4467 Section: 7.3.2.4 Collation Order
(2013 edition Page: 150 Line: 4503)

Add a new paragraph and a small-font note:

Weights should be assigned such that the collation sequence has a total ordering of all characters unless an '@' modifier in the locale name indicates that it has a special collation sequence.

<small>Note: a future version of this standard may require a total ordering of all characters for implementation-provided locales that do not have an '@' modifier in the locale name. See [xref to 7.3.2].</small>

On Page: 150 Line: 4481 Section: 7.3.2.4 Collation Order
(2013 edition Page: 150 Line: 4517)

Change from:

Characters specified via an explicit or implicit UNDEFINED special symbol shall by default be assigned the same primary weight (that is, they belong to the same equivalence class).

to:

Characters specified via an explicit or implicit UNDEFINED special symbol shall by default be assigned the same primary weight (that is, they belong to the same equivalence class) if the collation order has more than one weight level. If the collation order has only one weight level, these characters should be assigned unique primary weights, equal to the relative order of their character in the character collation sequence, but may be assigned the same primary weight.

<small>Note: a future version of this standard may require these characters to be assigned unique primary weights if the collation order has only one weight level.</small>

On Page: 150 Line: 4503 Section: 7.3.2.4 Collation Order
(2013 edition Page: 151 Line: 4539)

Delete the first entry in the example collation order:

```
UNDEFINED IGNORE;IGNORE
```

On Page: 150 Line: 4516 Section: 7.3.2.4 Collation Order
(2013 edition Page: 151 Line: 4552)

Add the following as the last entry in the example collation order:

```
UNDEFINED IGNORE;...
```


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On Page: 151 Line: 4519 Section: 7.3.2.4 Collation Order
(2013 edition Page: 151 Line: 4555)

Delete item 1 in the numbered list:

The **UNDEFINED** means that all characters not specified in this definition (explicitly or via the ellipsis) shall be ignored for collation purposes.

and renumber items 2-4 to be 1-3.

On Page: 151 Line: 4527 Section: 7.3.2.4 Collation Order
(2013 edition Page: 151 Line: 4563)

Add a new item 4 to the numbered list:

The **UNDEFINED** means that all characters not specified in this definition (explicitly or via the ellipsis) shall be ignored when comparing primary weights, and have individual secondary weights based on their ordinal encoded values.

Rationale: Austin Group Defect Report(s) applied: 938. See http://austingroupbugs.net/view.php?id=938.

Change Number: XBD/TC2/D4/0038 [663]

On Page: 151 Line: 4531 Section: 7.3.2.6 LC_COLLATE Category in the POSIX Locale
(2013 edition Page: 151 Line: 4567)

Change from:

The collation sequence definition of the POSIX locale follows; the code listing depicts the *localedef* input.

to:

The minimum collation sequence definition of the POSIX locale follows; the code listing depicts the *localedef* input. All characters not explicitly listed here shall be inserted in the character collation order after the listed characters and shall be assigned unique primary weights. If the listed characters have ASCII encoding, the other characters shall be in ascending order according to their coded character set values; otherwise, the order of the other characters is unspecified. The collation sequence shall not include any multi-character collating elements.

On Page: 151 Line: 4534 Section: 7.3.2.6 LC_COLLATE Category in the POSIX Locale
(2013 edition Page: 151 Line: 4570)

Change from:

```
# This is the POSIX locale definition for the LC_COLLATE category.
# The order is the same as in the ASCII codeset.
```

to:

```
# This is the minimum input for the POSIX locale definition for the
# LC_COLLATE category. Characters in this list are in the same order
# as in the ASCII codeset.
```


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Rationale: Austin Group Defect Report(s) applied: 663. See http://austingroupbugs.net/view.php?id=663.

Change Number: XBD/TC2/D4/0039 [584]

On Page: 152 Line: 4582 Section: 7.3.2.6 LC_COLLATE Category in the POSIX Locale

Change from:

<hyphen>

to:

<hyphen-minus>

Rationale: Austin Group Defect Report(s) applied: 584. See http://austingroupbugs.net/view.php?id=584.

Change Number: XBD/TC2/D4/0040 [912]

On Page: 163 Line: 5073 Section: 7.3.5.3 LC_TIME Category in the POSIX Locale
(2013 edition Page: 163 Line: 5109)

In the LC_TIME category definition, change from:

<percent_sign>

to:

<percent-sign>

Rationale: Austin Group Defect Report(s) applied: 912. See http://austingroupbugs.net/view.php?id=912.

Change Number: XBD/TC2/D4/0041 [584]

On Page: 179 Line: 5728 Section: 8.3 Other Environment Variables

In the description of TZ change from:

<plus-sign> ('+') character, or the minus-sign

to:

<plus-sign> ('+') character, or the <hyphen-minus>

Rationale: Austin Group Defect Report(s) applied: 584. See http://austingroupbugs.net/view.php?id=584.

Change Number: XBD/TC2/D4/0042 [554]

On Page: 182 Line: 5842-5848 Section: 9.2 Regular Expression General Requirements

Change from:

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In the regular expression processing described in POSIX.1-2008, the <newline> is regarded as an ordinary character and both a <period> and a non-matching list can match one. The Shell and Utilities volume of POSIX.1-2008 specifies within the individual descriptions of those standard utilities employing regular expressions whether they permit matching of <newline> characters; if not stated otherwise, the use of literal <newline> characters or any escape sequence equivalent produces undefined results.

to:

In the functions processing regular expressions described in the System Interfaces volume of POSIX.1-2008, the <newline> is regarded as an ordinary character and both a <period> and a non-matching list can match one. The Shell and Utilities volume of POSIX.1-2008 specifies within the individual descriptions of those standard utilities employing regular expressions whether they permit matching of <newline> characters; if not stated otherwise, the use of literal <newline> characters or any escape sequence equivalent in either patterns or matched text produces undefined results .

Change Number: XBD/TC2/D4/0043 [554]

On Page: 183 Line: 5875 Section: 9.3.2 BRE Ordinary Characters

Change from:

The interpretation of an ordinary character preceded by a <backslash> ('\\') is undefined, except for:

to:

The interpretation of an ordinary character preceded by an unescaped <backslash> ('\\') is undefined, except for:

On Page: 183 Line: 5887 Section: 9.3.3 BRE Special Characters

Change from:

that is not preceded by a <backslash>

to:

that is unescaped

On Page: 184 Line: 5894-5896 Section: 9.3.3 BRE Special Characters

Change from:

The <circumflex> shall be special when used as:
- An anchor (see Section XXX on page YYY)
- The first character of a bracket expression (see Section AAA on page BBB)

to:

The <circumflex> shall be special when used as an anchor (see Section XXX, on page YYY). The <circumflex> shall signify a non matching list expression when it occurs first in a list, immediately following a <left-square-bracket> (see Section AAA on page BBB).

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Rationale: Austin Group Defect Report(s) applied: 554. See http://austingroupbugs.net/view.php?id=554.

Change Number: XBD/TC2/D4/0044 [938]

On Page: 184 Line: 5902 Section: 9.3.5 RE Bracket Expression
(2013 edition Page: 184 Line: 5944)

Change from:

A bracket expression (an expression enclosed in square brackets, "[ ]") is an RE that shall match a single collating element contained in the non-empty set of collating elements represented by the bracket expression.

to:

A bracket expression (an expression enclosed in square brackets, "[ ]") is an RE that shall match a specific set of single characters, and may match a specific set of multi-character collating elements, based on the non-empty set of list expressions contained in the bracket expression.

On Page: 184 Line: 5907 Section: 9.3.5 RE Bracket Expression
(2013 edition Page: 184 Line: 5949)

In list item 1, change from:

It consists of one or more expressions: collating elements, collating symbols, ...

to:

It consists of one or more expressions: ordinary characters, collating elements, collating symbols, ...

On Page: 184 Line: 5921 Section: 9.3.5 RE Bracket Expression
(2013 edition Page: 184 Line: 5963)

In list item 2, change from:

A matching list expression specifies a list that shall match any single-character collating element in any of the expressions represented in the list. The first character in the list shall not be the <circumflex>; for example, "[abc]" is an RE that matches any of the characters 'a', 'b', or 'c'.

to:

A matching list expression specifies a list that shall match any single character that is matched by one of the expressions represented in the list. The first character in the list can not be the <circumflex>. An ordinary character in the list should only match that character, but may match any single character that collates equally with that character; for example, "[abc]" is an RE that should only match one of the characters 'a', 'b', or 'c'.

<small>Note: a future version of this standard may require that an ordinary character in the list only matches that character.</small>

Rationale: Austin Group Defect Report(s) applied: 938. See http://austingroupbugs.net/view.php?id=938.

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Change Number: XBD/TC2/D4/0045 [872]

On Page: 184 Line: 5926 Section: 9.3.5 RE Bracket Expression
(2013 edition Page: 184 Line: 5968)

In list item 3, change from:

A non-matching list expression begins with a <circumflex> ('^'), and specifies a list that shall match any single-character collating element except for the expressions represented in the list after the leading <circumflex>.

to:

A non-matching list expression begins with a <circumflex> ('^'), and the matching behavior shall be the logical inverse of the corresponding matching list expression (the same bracket expression but without the leading <circumflex>).

Rationale: Austin Group Defect Report(s) applied: 872. See http://austingroupbugs.net/view.php?id=872.

Change Number: XBD/TC2/D4/0046 [938]

On Page: 184 Line: 5928 Section: 9.3.5 RE Bracket Expression
(2013 edition Page: 184 Line: 5970)

In list item 3, change from:

For example, "[^abc]" is an RE that matches any character except the characters 'a', 'b', or 'c'.

to:

For example, if the RE "[abc]" only matches 'a', 'b', or 'c', then "[^abc]" is an RE that matches any character except 'a', 'b', or 'c'.

On Page: 185 Line: 5953 Section: 9.3.5 RE Bracket Expression
(2013 edition Page: 185 Line: 5995)

In list item 6, change from:

The set of single-character collating elements whose characters belong to the character class

to:

The set of single characters that belong to the character class

Rationale: Austin Group Defect Report(s) applied: 938. See http://austingroupbugs.net/view.php?id=938.

Change Number: XBD/TC2/D4/0047 [584]

On Page: 185 Line: 5972 Section: 9.3.5 RE Bracket Expression

Change from:

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776 <hyphen>

777 to:

778 <hyphen-minus>

779 *Rationale*: Austin Group Defect Report(s) applied: 584. See http://austingroupbugs.net/view.php?id=584.

780 **Change Number: XBD/TC2/D4/0048** [584]

781 On Page: 186 Line: 5982,5989,5992 Section: 9.3.5 RE Bracket Expression

782 Change from:

783 <hyphen>

784 to:

785 <hyphen-minus>

786 *Rationale*: Austin Group Defect Report(s) applied: 584. See http://austingroupbugs.net/view.php?id=584.

787 **Change Number: XBD/TC2/D4/0049** [595]

788 On Page: 186 Line: 6016 Section: 9.3.6 BREs Matching Multiple Characters

789 Change rule 3 from:

790 For example, the expression "^\(.*\)\1$" matches lines consisting of two adjacent appearances of the same
791 string,

792 to:

793 For example, the expression "^\(.*\)\1$" matches strings consisting of two adjacent appearances of the
794 same substring,

795 On Page: 187 Line: 6053 Section: 9.3.8 BRE Expression Anchoring

796 Change from:

797 A BRE can be limited to matching strings that begin or end a line; this is called "anchoring".

798 to:

799 A BRE can be limited to matching expressions that begin or end a string; this is called "anchoring".

800 *Rationale*: Austin Group Defect Report(s) applied: 595. See http://austingroupbugs.net/view.php?id=595.

801

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Change Number: XBD/TC2/D4/0050 [554]

On Page: 188 Line: 6082-6083 Section: 9.4.2 ERE Ordinary Characters

Change from:

The interpretation of an ordinary character preceded by a <backslash> ('\\') is undefined.

to:

The interpretation of an ordinary character preceded by an unescaped <backslash> ('\\') is undefined, except in the context of a bracket expression (see XREF to ERE bracket expression).

On Page: 188 Line: 6092 Section: 9.4.3 ERE Special Characters

Add the following text after line 6092:

A <left-square-bracket> that is unescaped and is not part of a bracket expression also produces undefined results.

On Page: 188 Line: 6098-6099 Section: 9.4.3 ERE Special Characters

Change from:

If these characters appear first in an ERE, or immediately following a <vertical-line>, <circumflex>, or <left-parenthesis>

to:

If these characters appear first in an ERE, or immediately following an unescaped <vertical-line>, <circumflex>, <dollar-sign>, or <left-parenthesis>

On Page: 189 Line: 6106-6109 Section: 9.4.3 ERE Special Characters

Change from:

The <circumflex> shall be special when used as:
- An anchor (see Section XXX on page YYY)
- The first character of a bracket expression (see Section AAA on page BBB)

to:

The <circumflex> shall be special when used as an anchor (see Section XXX, on page YYY). The <circumflex> shall signify a non matching list expression when it occurs first in a list, immediately following a <left-square-bracket> (see Section AAA on page BBB).

Rationale: Austin Group Defect Report(s) applied: 554. See http://austingroupbugs.net/view.php?id=554.

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Change Number: XBD/TC2/D4/0051 [595]

On Page: 190 Line: 6175 Section: 9.4.9 ERE Expression Anchoring

Change from:

An ERE can be limited to matching strings that begin or end a line; this is called "anchoring".

to:

An ERE can be limited to matching expressions that begin or end a string; this is called "anchoring".

Rationale: Austin Group Defect Report(s) applied: 595. See http://austingroupbugs.net/view.php?id=595.

Change Number: XBD/TC2/D4/0052 [554]

On Page: 192 Line: 6233 Section: 9.5.1 BRE/ERE Grammar Lexical Conventions

For token SPEC_CHAR delete the phrase:

or when first in a bracket expression

On Page: 195 Line: 6379-6380 Section: 9.5.3 ERE Grammar

Change from:

The ERE grammar does not permit several constructs that previous sections specify as having undefined results:

to:

The ERE grammar does not permit several constructs that previous sections specify as having undefined results. Additionally, there are some constructs which the grammar permits but which still give undefined results:

On Page: 195 Line: 6381 Section: 9.5.3 ERE Grammar

Change from:

ORD_CHAR preceded by a <backslash> character

to:

ORD_CHAR preceded by an unescaped <backslash> character

On Page: 195 Line: 6383 Section: 9.5.3 ERE Grammar

Add '$' to the list of characters.

Rationale: Austin Group Defect Report(s) applied: 554. See http://austingroupbugs.net/view.php?id=554.

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Change Number: XBD/TC2/D4/0053 [916]

On Page: 195 Line: 6387 Section: 9.5.3 ERE Grammar
(2013 edition Page: 195 Line: 6433)

Change from:

Conforming applications cannot use such constructs.

to:

Strictly conforming applications cannot use such constructs.

Rationale: Austin Group Defect Report(s) applied: 916. See http://austingroupbugs.net/view.php?id=916.

Change Number: XBD/TC2/D4/0054 [967]

On Page: 198 Line: 6438-6454 Section: 10.2 Output Devices and Terminal Types
(2013 edition Page: 198 Line: 6484-6500)

Delete the two **Symbolic Name** columns from Table 10-1.

Rationale: Austin Group Defect Report(s) applied: 967. See http://austingroupbugs.net/view.php?id=967.

Change Number: XBD/TC2/D4/0055 [745]

On Page: 204 Line: 6682,6684 Section: 11.1.9 Special Characters

On line 6682, for CR change from:

carriage-return

to:

<carriage-return>

On line 6684, append a sentence to the description of CR:

It cannot be changed.

Rationale: Austin Group Defect Report(s) applied: 745. See http://austingroupbugs.net/view.php?id=745.

Change Number: XBD/TC2/D4/0056 [584]

On Page: 213 Line: 7006 Section: 12.1 Utility Argument Syntax

Change from:

<hyphen>

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to:

<hyphen-minus>

Rationale: Austin Group Defect Report(s) applied: 584. See http://austingroupbugs.net/view.php?id=584.

Change Number: XBD/TC2/D4/0057 [813]

On Page: 214 Line: 7056 Section: 12.1 Utility Argument Syntax

After the third bullet item, add a new bullet item:

- When the utility description states that the number is a file size-related value (such as a file size or offset, line number, or block count), numerals in the range 0 to the maximum file size supported by the implementation are syntactically recognized as numeric values (see XCU 1.5 Considerations for Utilities in Support of Files of Arbitrary Size). Where negative values are permitted, any value in the range -(maximum file size) to the maximum file size is accepted.

Rationale: Austin Group Defect Report(s) applied: 813. See http://austingroupbugs.net/view.php?id=813. The normative requirement in XCU 1.5 does not match the syntax utility guidelines which suggest very large values may be supported but are not required to be.

Change Number: XBD/TC2/D4/0058 [579]

On Page: 220 Line: 7211 Section: <aio.h>

In the DESCRIPTION section, change from:

The tag **sigevent** shall be declared as naming an incomplete structure type, the contents of which are described in the <**signal.h**> header.

to:

The <**aio.h**> header shall define the **sigevent** structure and **sigval** union as described in <**signal.h**>.

Rationale: Austin Group Defect Report(s) applied: 579. See http://austingroupbugs.net/view.php?id=579.

Change Number: XBD/TC2/D4/0059 [496]

On Page: 236 Line: 7737 Section: <errno.h>

In the DESCRIPTION section, change from:

[ENOSYS] Function not supported.

to:

[ENOSYS] Functionality not supported.

Rationale: Austin Group Defect Report(s) applied: 496. See http://austingroupbugs.net/view.php?id=496.

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