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Use Page Up and Page Down Keys**

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Conference

Supporting Unicode Text

Merle Tenney

International Technology Manager
Worldwide Developer Relations

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What's New?

- ATSUI 1.1 and 1.2
  - API enhancements, performance improvements, Type 1 font support

- Unicode Text Utilities
  - Collation, character properties, text breaking; new locale model

- Multilingual Text Editor
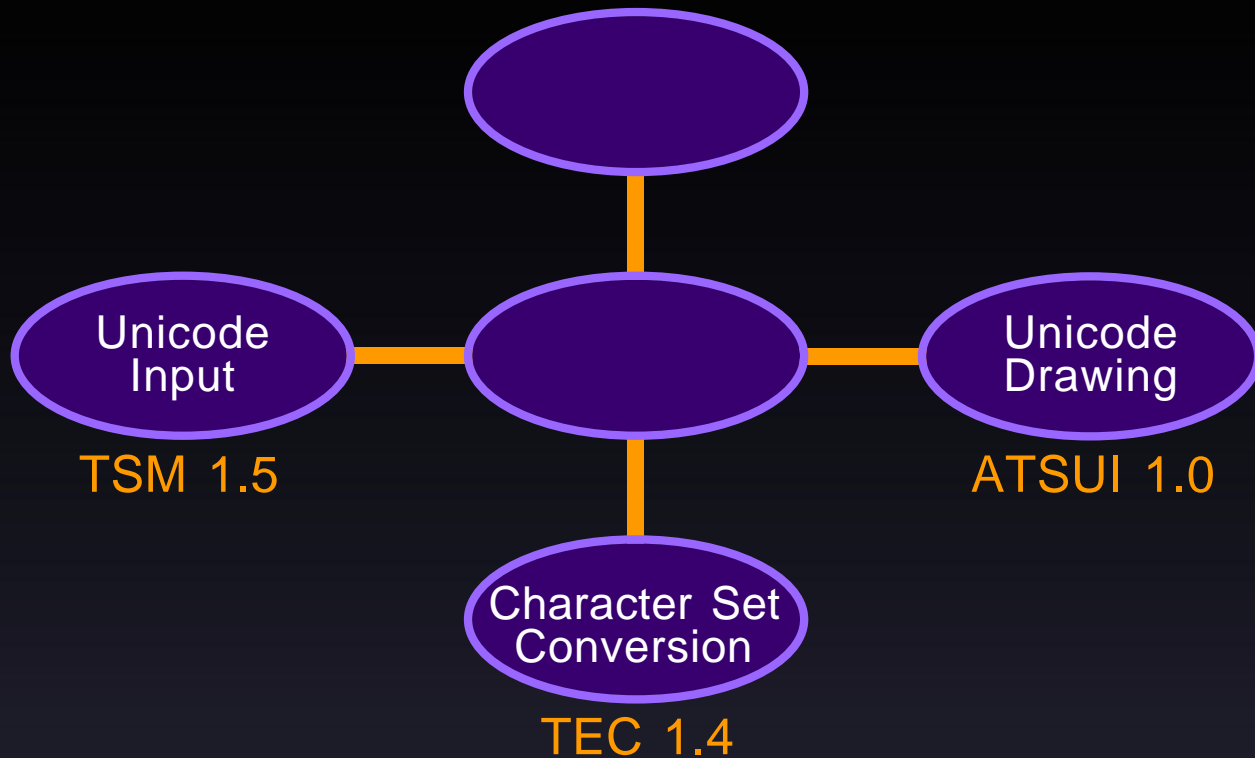 - Unicode and WorldScript

Unicode Text Processing Model
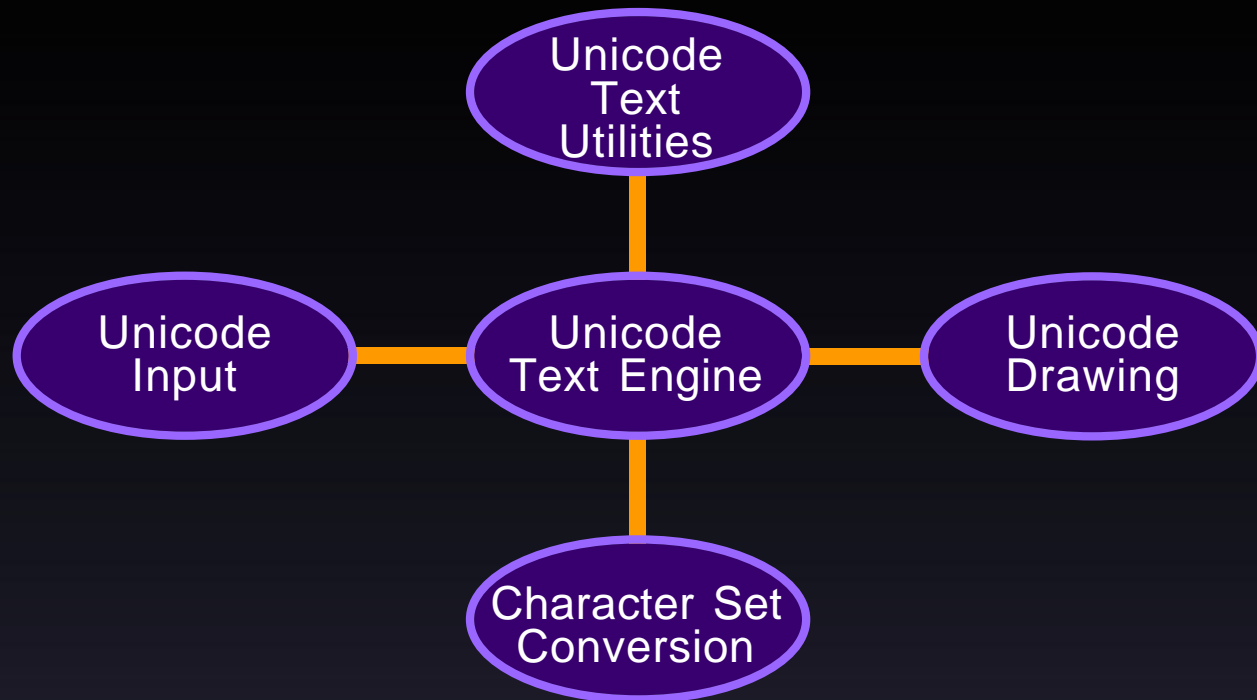
Unicode Text Processing Model

Mac OS 8.5 Services

Unicode
Input

TSM 1.5

Unicode
Drawing

ATSUI 1.0

Character Set
Conversion

TEC 1.4

Unicode Text Processing Model

Mac OS 8.6 Services

Unicode Text Utilities

Locales
Collation

Unicode Input

Unicode Drawing

TSM 1.5

ATSUI 1.1

Character Set Conversion

TEC 1.4.3
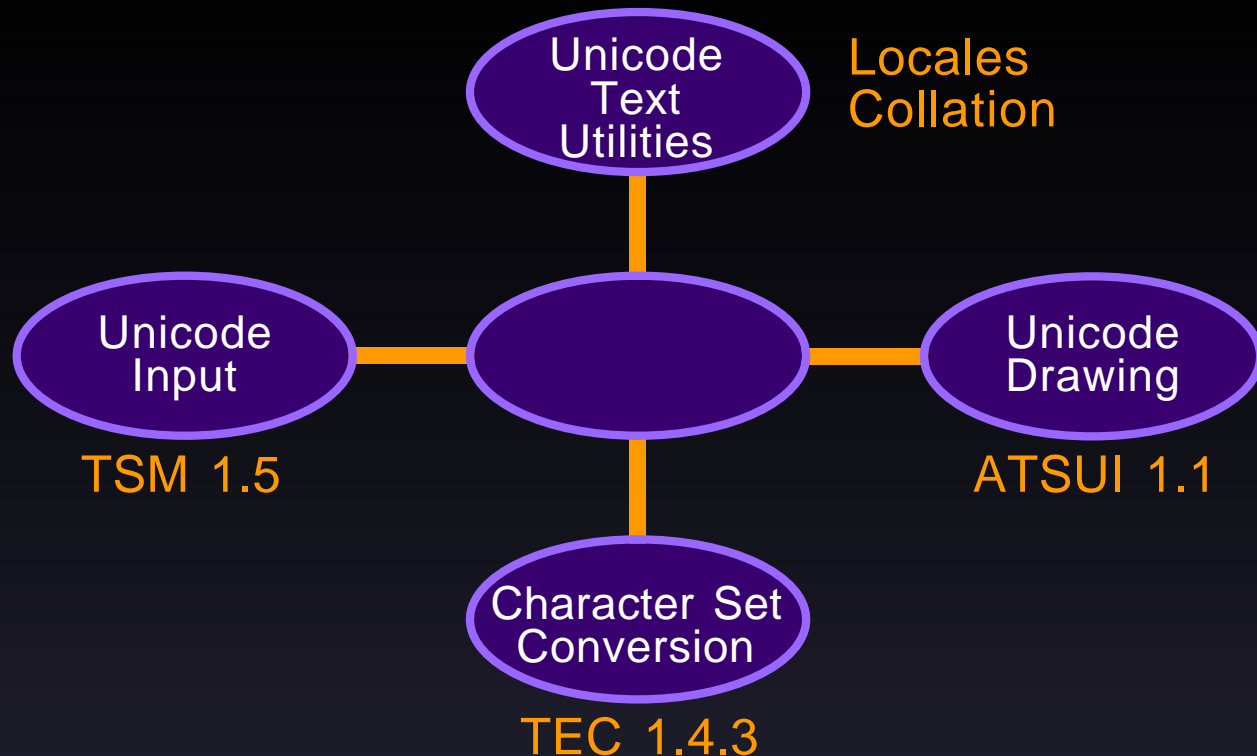
Unicode Text Processing Model
Upcoming Mac OS Release Services

Unicode Text Utilities

Locales
Collation
Properties
Text Break

Unicode Input

Unicode Text Engine

Unicode Drawing

TSM 1.5

MLTE 1.0

ATSUI 1.2

Character Set Conversion

TEC 1.5
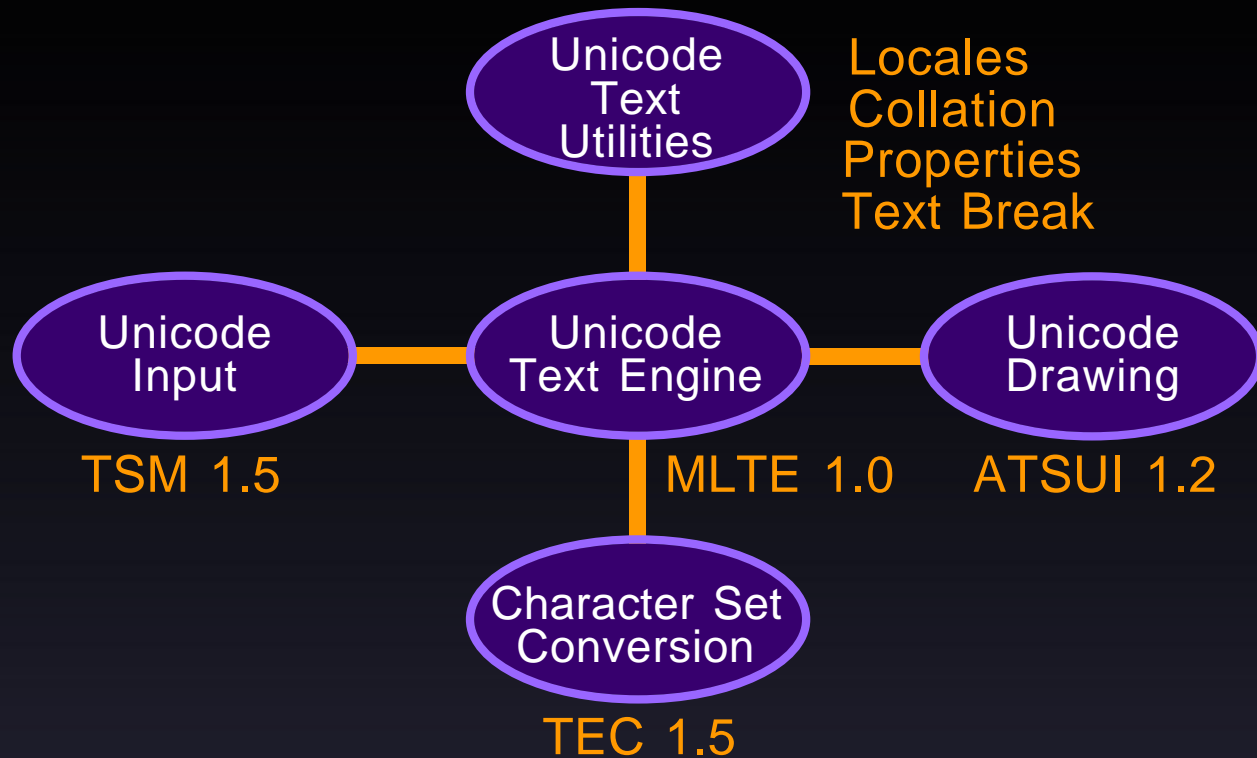
ATSUI and Unicode Utilities

Peter Edberg

Senior Engineer
International and Text Group

ATSUI

- Direct Unicode imaging
    - Combining character support
    - Bidirectional and complex script support

- Larger character and language repertoire

- Support for vertical text

- Advanced typographical features

What's New in ATSUI?

- More flexible memory management
- Client control over font fallbacks
- Better support for tabs and embedded objects
- Language-sensitive word breaking
- Performance and footprint improvements
- PostScript Type 1 font support

Unicode Text Utilities

- Support internationally correct processing of Unicode text

- Counterpart to WorldScript international text utilities

- Mac OS 8.6: new locale model, collation
  - 13 languages supported in US release

- Coming soon: character properties, text breaking

New Locale Model

- Opaque locale reference ⟺ ASCII tag, …
- Operations: collation, text breaking, …
  - Can have variants, e.g., sort orders
  - Can enumerate all locales+variants
  - Create operation "object" to use
- Locales, operations, variants have (multiple) localized names

Mac OS 8.6: Collation

- Superset of WorldScript collation features
- Can support variants: e.g., dictionary order, bibliographic order, etc.
- Both locale-sensitive and -insensitive
- Generate collation keys (binary compare)

Coming Soon

- Character properties
    - Access to Unicode character database

- Text breaking
    - Character (surrogate pairs), cluster (base+accent, etc.), word, line

- Collation
    - Number collation ("Page 2" < "Page 10")

Unicode Data Types

- Always UTF-16, big-endian, BOM optional
- 'utxt': plain text file/clipboard/resource
- 'utx#': multiple 'utxt' strings
  - 16-bit count of strings
  - 16-bit length prefix for each string
- ATSUI documentation has more details
- CFString: opaque string type in Carbon

In Summary

- Apple fully committed to supporting Unicode in Mac OS

- Apple will focus more and more on Unicode in the future

- Unicode applications can access more data and more languages from around the world

Multilingual Text Editor

Xavier Legros

Software Engineer
International and Text Group

What Can MLTE Do?

- Unicode—input, editing, and display
- Support most-requested TextEdit enhancements
- Handle text files with Mac OS encodings and Unicode
- Provide easy access to advanced ATSUI typographic features

Demo

Lee Collins

International and Text Group

Unicode Support

- Unicode input based on TSM 1.5
- Unicode imaging based on ATSUI
    - Internationally correct text layout

- Expanded character and language repertoire surpasses that of WorldScript and QuickDraw Text

Features

- No more 32K limit!
- Tab support
- Embedded pictures, sounds, and movies
- Full justification support
- Multiple undo/redo

More Features

- Can read and write Unicode files ('utxt')
- Built-in printing support
- Built-in scrolling
  - Live scrolling
  - Proportional thumbs
- Built-in clipboard support
  - Automatically converts to/from Unicode

Ease of Development

- Scalability
  - From labels to edit text fields to editors

- Low-level managers handled transparently
  - Drag & Drop, TSM, Control Manager, etc.

- Fewer lines of code in your application than with TextEdit

Typographic Features

- Hierarchical font menu built automatically
- Simple access to linguistic and stylistic features
  - Ligatures, swashes, variations, …

Demo

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In Summary

- A complete text editing solution which removes the limitations of TextEdit

- Supports Unicode, media embedding, and modern UE features

- For intermediate text editing needs

- Developers with advanced requirements can use ATSUI and TSM directly

Roadmap

Font Management for Applications	Hall C **Tues., 2:30pm**
Maintaining and Extending Fonts	Hall C **Tues., 4:00pm**
International Technologies Feedback Forum	Hall J2 **Wed., 10:15am**
International Technologies Lunch	Hall 3 **Wed., 11:30am**
Core Foundation Overview	Hall 2 **Wed., 1:00pm**

Q&A

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