

ECMAScript Globalization API

Internationalization

Ad-hoc Group

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Goals

- Provide most commonly used internationalization functionality, with configuration options
- Support multiple locales per application
- Leverage existing implementations
- Results matching user expectations
- Based on standard identifiers
- Compatible with ES 5.1 and 6

Functionality

- Locale negotiation
- Collation (string comparison)
- Number formatting
- Date and time formatting

Main Usage Patterns

- `coll = new Collator(localeList, options);`
`a.sort(function (x, y) {`
 `return coll.compare(x, y);`
`});`
- `format = new Format(localeList, options);`
`result = format.format(valueToFormat);`

Locale and Options Negotiation ①

- Complicated by Unicode extension
 - de-u-co-phonebk-cu-jpy-nu-thai
 - Keys are not arranged generic->specific, so no fallback by chopping subtags
 - Some parameters are locale related
 - Some parameters should/must be under application control (currency)
 - One parameter (co) has both

Locale and Options Negotiation ②

- Constructors combine locale and options negotiation
- ResolveLocale splits Unicode extension from core language tag
 - Two algorithms for core:
 - BCP 47 Lookup (fully specified)
 - Best-fit (implementation dependent)
 - Locale data based negotiation for extension keys and options

resolvedOptions

- resolvedOptions accessor
 - actual locale
 - actual parameter settings

Implementation Dependencies ①

- Modeling the real world, with different results
 - Set of supported locales
 - Set of supported features per locale
 - Collation rules
 - Number formats, currency symbols
 - Calendar and time zone rules
 - Date and time formats

Implementation Dependencies ②

- Different capabilities of implementations
 - + Best-fit language negotiation
 - + Best-fit date-time format negotiation
 - + Collation features
 - Combinability of locales and calendars
 - Time zone selection

Enhance Core ECMAScript Functions

- Respecify *locale* methods
 - String.prototype.localeCompare
 - Number.prototype.toLocaleString
 - Date.prototype.toLocaleString & Co.
- Add localeList, options parameters to all

Issues Between API and Language Spec

- Supplementary characters
- Time zones and calendars
- ValueError