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 🌍

- 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

- 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