Foreword

This third edition cancels and replaces the second edition, ECMA 335:2002. Major changes from the previous edition include:

- Added support for generic types and methods.

- Added the `constrained.`, `no.`, and `readonly.` instruction prefixes.

- Added the **ldelem**, **stelem**, and **unbox.any** instructions.

- Created a new Partition V, "Debug Interchange Format".

- Renamed Partition V as Partition VI, and added "Extensions to metadata" and "Imprecise faults".

- Added the following members and types to the type library:

  1. `System`:

     a. `Action<T>` – added this type.

     b. `Array` – added the following members (or overloads to existing members): `AsReadOnly<T>`, `BinarySearch<T>`, `ConstrainedCopy`, `ConvertAll<T,U>`, `Copy`, `CopyTo`, `CreateInstance`, `Exists`, `Find`, `FindAll`, `FindIndex`, `FindLastIndex`, `ForEach`, `GetLongLength`, `GetValue`, `IndexOf<T>`, `LastIndexOf<T>`, `Resize<T>`, `SetValue`, `Sort<K,V>`, `Sort<T>`, and `TrueForAll`.

     c. `Comparison<T>` – added this type.

     d. `Converter<T>` – added this type.

     e. `IComparable<T>` – added this type.

     f. `IEquatable<T>` – added this type.

     g. `Nullable<T>` – added this type.

     h. `Predicate<T>` – added this type.

     i. `System.RuntimeArgumentHandle` – added this type and placed it in the new library, Vararg.

     j. `ThreadStaticAttribute` – added this type.

     k. `Type` –

        Added the following methods: `MakeArrayType`, `MakeByRefType`, and `MakePointerType`.

        Added the following properties: `IsAnsiClass`, `IsAutoClass`, and `IsUnicodeClass`.

        Added the following new members to support generics reflection: `BindGenericParameters`, `ContainsGenericParameters`, `DeclaringMethodProperty`, `GenericParameterAttributes`, `GenericParameterPosition`, `GetGenericArguments`, `GetGenericParameterConstraints`, `GetGenericTypeDefinition`, `HasGenericArguments`, `IsGenericParameter`, and `IsGenericTypeDefinition`.

        Augmented the following members to support generics reflection: *Methods*: `GetConstructor`, `GetConstructors`, `GetDefaultMembers`, `GetElementType`, `GetEvent`, `GetEvents`, `GetField`, `GetFields`, `GetInterface`, `GetInterfaces`, `GetMember`, `GetMembers`, `GetMethod`, `GetMethods`, `GetNestedType`, `GetNestedTypes`, `GetProperties`, `GetProperty`, `GetType`, `InvokeMember`, `IsAssignableFrom`, `IsInstanceOfType`, `IsSubclassOf`, and `ToString`. *Properties*: `Assembly`, `AssemblyQualifiedName`, `Attributes`, `BaseType`, `DeclaringTypeProperty`, `Fullname`, `HasElementType`, `IsAbstract`, `IsArray`, `IsAutoLayout`, `IsClass`, `IsEnum`, `IsExplicitLayout`, `IsImport`, `IsInterface`, `IsLayoutSequential`, `IsNestedAssembly`, `IsNestedFamANDAssem`, `IsNestedFamily`, `IsNestedFamORAssem`, `IsNestedPrivate`, `IsNestedPublic`, `IsNotPublic`, `IsPointer`, `IsPrimitive`, `IsPublic`, `IsSealed`, `IsSpecialName`, `Module`, `Namepsace`, `ReflectedType`, and `TypeInitializer`.

l. `TypedReference` – added this type.

2. `System.Collections.Generics`:

   a. Created this namespace and added the following types to it: `Dictionary<TKey,TValue>`, `Dictionary<TKey,TValue>.Enumerator`, `Dictionary<TKey,TValue>.KeyCollection`, `Dictionary<TKey,TValue>.KeyCollection.Enumerator`, `Dictionary<TKey,TValue>.ValueCollection`, `Dictionary<TKey,TValue>.ValueCollection.Enumerator`, `ICollection<T>`, `IComparer<T>`, `IDictionary<TKey,TValue>`, `IEnumerable<T>`, `IEnumerator<T>`, `IEqualityComparer<T>`, `IList<T>`, `KeyNotFoundException`, `KeyValuePair<K,V>`, `List<T>`, and `List<T>.Enumerator`.

3. `System.Reflection`:

   a. `MethodBase` – added the following new members to support generics reflection: `BindGenericParameters`, `ContainsGenericParameters`, `GetGenericArguments`, `GetGenericMethodDefinition`, `HasGenericArguments`, and `IsGenericMethodDefinition`.

   b. `MethodInfo` – added the following new members to support generics reflection: `BindGenericParameters`, `ContainsGenericParameters`, `GetGenericArguments`, `GetGenericMethodDefinition`, `HasGenericArguments`, and `IsGenericMethodDefinition`.

   c. `TypeAttributes` – added the following new enumeration values to support a non-standard encoding for String Formatting attributes: `CustomFormatClass` and `CustomStringFormatMask`.

   d. `GenericParameterAttributes` – added this type.

4. `System.Runtime.CompilerServices`:

   a. `CompilationRelaxations` – added this type and placed it in the library RuntimeInfrastructure.

   b. `CompilationRelaxationsAttribute` – added this type and placed it in the library RuntimeInfrastructure.

5. `System.Threading.Parallel`: This namespace contains a new family of types that allow multithreaded CPUs to be exploited.