Event SDKs

Magnus Bäck

What's an event SDK?

A library for a particular language that allows us to

> work with Eiffel events of any type and version as high-level data
structures,
> serialize such values to JSON (and validate them), and
> deserialize arbitrary JSON strings back into high-level data structures.

The case for SDKs for Eiffel events

> Eiffel consumers and producers benefit from having data types that represent Eiffel events.
> Especially when working in typed languages.
> Especially when consuming events.
> Especially when writing tests.
> No more issues with typos, better IDE/linting support, etc.

Examples of code to build events

```
JSONObject event = new JSONObject();
JSONObject meta = new JSONObject();
meta.put("type", "EiffelCompositionDefinedEvent");
meta.put("id", UUID.randomUUID().toString());
event.put("meta", meta);
```

```
event := map[string]interface{}{
  "meta": map[string]interface{}{
    "type": "EiffelCompositionDefinedEvent",
    "id": uuid.New().String(),
  },
}
```

Many local and/or incomplete solutions

Project	Language	To JSON	From JSON	Versioned	Other
eiffel-remrem-semantics	Java	✔	?		
eiffel-pythonlib	Python	✔	✔		Still untyped
eiffel-broadcaster	Java	✔	✔		Not all events
Axis's Gerrit plugin	Java	✔	✔		Not all events

Event versioning

> New type for every major version.
> Should be able to reuse the same type *within* a major version.
> The type for a major version would include the members for the most recent version of the event.

```
public class EiffelArtifactCreatedEventV2 extends EiffelEvent { ... }

public class EiffelArtifactCreatedEventV3 extends EiffelEvent { ... }
```

Challenges

> You can generate code from the JSON schemas but the resulting API can be rather disappointing and far from canonical.
> Hand-writing the code can be quite tedious.

Ongoing work with Go SDK

> Work to create a Go SDK has been started and will eventually get published in the **eiffelevents-sdk-go** repository.
> Repository name deliberately chosen to support other kinds of SDKs and other languages.
> Will contain hand-written types or types generated from the schemas using a custom program.