RFC 8007: CDNI Control Interface / Triggers

- Content/Metadata management
  - Preposition
  - Invalidation
  - Purge
New Trigger.v2 Object Properties

- Type (e.g. preposition)
- metadata.urls
- content.urls
- content.ccid
- metadata.patterns
- content.patterns
- content.regexes
- content.playlists
- Trigger Extensions
- cdn-path

Action

- Trigger Specs
- Trigger Extensions
- cdn-path

“What”: What to do (e.g. preposition)

“Whom”: Targets to be executed on

“How”: Execution special instructions
Suggested Rename: trigger type → action

- Preposition
- Invalidation
- Purge
Generic “Spec” Object

- Specify targets to execute the trigger on
- A matching capability for dCDN to advertise (via FCI)
- Generic - several types are already defined
  - UrlsSpec / CcidSpec / UriPatternsSpec / UrlRegexesSpec / ContentPlaylistsSpec
  - Future …
- Apply to a specified Trigger-Subject
  - Metadata
  - Content
  - Future …
- Decouples the selection method from the subject type
Generic “Spec” Object - Structure - Regex-Match Example

Properties

- spec-subject
- generic-trigger-spec-type
- generic-trigger-spec-value

```
{
    "spec-subject": "CIT.Content",
    "generic-trigger-spec-type": "CIT.RegexMatchsSpec",
    "generic-trigger-spec-value": {
        "regex": "^(https:\/\/video\.example\.com)\/movie1\/*(index.m3u8|\d{3}.ts)$",
        "case-sensitive": true,
        "match-query-string": false
    }
}
```

UriPatterns/RegexMatch/ContentPlaylist types support multiple values to be matched by definition.
Generic “Spec” Object - Structure - URLs Example

Properties

- spec-subject
- generic-trigger-spec-type
- generic-trigger-spec-value

```
{
    "spec-subject": "CIT.Metadata",
    "generic-trigger-spec-type": "CIT.UrlsSpec",
    "generic-trigger-spec-value": {
        "urls": [
            "https://metadata.example.com/a/b/c",
            "https://metadata.example.com/a/b/d",
            "https://metadata.example.com/a/b/d9"
        ]
    }
}
```
"trigger.v2": {
    "action": "CIT.Preposition",
    "specs": [
        {
            "spec-subject": "CIT.Metadata",
            "generic-trigger-spec-type": "CIT.UrlsSpec",
            "generic-trigger-spec-value": {
                "urls": [
                    "https://metadata.example.com/a/b/c",
                    "https://metadata.example.com/a/b/d"
                ]
            }
        },
        {
            "spec-subject": "CIT.Content",
            "generic-trigger-spec-type": "CIT.RegexMatchsSpec",
            "generic-trigger-spec-value": {
                "regex": "^(https:\/\/video\.example\.com)\/movie1\/*(index.m3u8|\d{3}.ts)$",
                "case-sensitive": true,
                "match-query-string": false
            }
        }
    ]
}
Status.v2 / Error.v2 Object

- Error.v2 Object - adjusting the “Error” object
  - Remove the “metadata.urls” etc. properties
  - Add the “spec” list
- Only the “specs” the error applies to are listed
- The Status (status.v2) object is added with a “errors.v2” list
  - As well as a “Trigger.v2” internal object
Structure is Reflected to Error.v2 Object

"errors.v2": [
    {
        "specs": [
            {
                "spec-subject": "CIT.Content",
                "generic-trigger-spec-type": "CIT.UrlsSpec",
                "generic-trigger-spec-value": {
                    "urls": [
                        "https://www.example.com/a/b/c/2"
                    ]
                }
            }
        ],
        "description": "The dCDN rejected a regex due to complexity",
        "error": "ereject",
        "cdn": "AS64500:0"
    }
]
Generic “Extension” Object

- Add instructions for finer control over the trigger execution
- A matching capability for dCDN to advertise (via FCI)
- Generic - several types are already defined
  - LocationPolicy
  - TimePolicy
  - Future ...
- May also be used to avoid future trigger structure changes
Generic “Extension” Object

Properties

- generic-trigger-extension-type
- generic-trigger-extension-value
- mandatory-to-enforce
- safe-to-redistribute
- incomprehensible
Generic “Extension” Object - Example

```json
{
   "generic-trigger-extension-type": "CIT.LocationPolicy",
   "generic-trigger-extension-value": {
      "locations": [
         {
            "action": "deny",
            "footprints": [
               {
                  "footprint-type": "countrycode",
                  "footprint-value": ["us"]
               }
            ]
         }
      ],
      "mandatory-to-enforce": true,
      "safe-to-redistribute": true,
      "incomprehensible": false
   }
}
```
What is still left to be done?

• Do a broad sweep review of aforementioned changes including
• Submit an updated draft prior to IETF 117
• Ask for a WGLC at IETF 117
  – Or maybe even now ?????