Common Catalog Format

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Agenda for this session

- Present updates and changes since IETF #118
  - PR#32 - adds in support for RFC6902 JSON patching as the delta update mechanism for catalogs.
  - PR#34 - allowing relative track names and inherited namespace
- Review PRs that are open
  - PR #39 - Adds an IANA registry for catalog fields
  - PR #40 - Add a new field to indicate if delta updates are to be expected
  - Add a new root object to hold inheritable track attributes
- Adoption of the Internet Draft

The catalog spec repo
https://github.com/moq-wg/catalog-format

I-D available at https://datatracker.ietf.org/doc/draft-wilaw-moq-catalogformat/02/
  -

Merged PR#32 - adds in support for RFC6902 JSON patching as the delta update mechanism for catalogs.

At IETF#118 we debated two standardized update mechanisms for JSON files - RFC 6902 - JSON Patch and RFC 7396 JSON Merge Patch. Consensus was in adopting RFC 6902, which PR#32 implemented.

Consequences of this decision

1. Sequence and parentSequence fields have been removed. We now rely on moq-transport Object ID to convey sequence.
2. Delta updates now look like the json to the right, which adds a new track and removes an existing track.
3. Note that removal is via array index, which can be adjusted by previous operations.

```
[
  { "op": "add", "path": "/tracks/-", "value": {
   "name": "slides",
   "selectionParams": {
      "codec":"av01.0.08M.10.0.110.09",
      "width":1920,
      "height":1080,
      "framerate":15,
      "Bitrate":750000
      },
      "renderGroup":1
    }
  },
  { "op": "remove", "path": "/tracks/0"}
]
```

Merged PR #34: Allowing relative track names and inherited namespace

This PR makes the namespace field optional in a catalog.

If namespace is absent, then the namespace is inherited from the catalog namespace.

If the catalog full track name is `premiergaming/gamer34/catalog` and it looks like this:

```
{

    tracks: [{"name":"video"},{"name":"audio"}]

}
```

Client would subscribe to

`premiergaming/gamer34/video`

`premiergaming/gamer34/audio`

Open PR #39 - Adds an IANA registry for catalog fields

Purpose is to allow new fields to be added in the future without having to revise the RFC.

This document creates a new IANA registry for the Common Catalog fields. The registry is called "**MoQ Common Catalog Fields**". This registry is managed by the IANA according to the *Specification Required* policy of [RFC5226]. The initial entries in the registry are:

Descriptive Name	Field Name	Required	Location	JSON type	Specification
:===================	:===================	:=========	:=========	:==========	:==
Catalog version	version	yes	R	String	https://datatracker.ietf.org/doc/draft-wilaw-moq-catalogformat/
Streaming format	streamingFormat	yes	RC	String	https://datatracker.ietf.org/doc/draft-wilaw-moq-catalogformat/
Streaming format version	streamingFormatVersion	yes	RC	String	https://datatracker.ietf.org/doc/draft-wilaw-moq-catalogformat/
Tracks	tracks	opt	R	Array	https://datatracker.ietf.org/doc/draft-wilaw-moq-catalogformat/
Catalogs	catalogs	opt	R	Array	https://datatracker.ietf.org/doc/draft-wilaw-moq-catalogformat/
Track namespace	namespace	opt	RTC	String	https://datatracker.ietf.org/doc/draft-wilaw-moq-catalogformat/
Track name	name	yes	TC	String	https://datatracker.ietf.org/doc/draft-wilaw-moq-catalogformat/
Packaging	packaging	yes	RT	String	https://datatracker.ietf.org/doc/draft-wilaw-moq-catalogformat/
Track operation	operation	yes	RT	String	https://datatracker.ietf.org/doc/draft-wilaw-moq-catalogformat/
Track label	label	opt	RT	String	https://datatracker.ietf.org/doc/draft-wilaw-moq-catalogformat/

...

*The specification link is just a placeholder until the RFC is published.

Open PR #40 - Add a new field to indicate if delta updates are to be expected

Purpose is to inform a player if it is necessary to support the delta updates (patch) mechanism in order to understand future catalog updates. This field should be omitted if it is FALSE.

Field	Name	Required	Location	JSON type
Supports delta updates	supportsDeltaUpdates	opt	RC	Boolean

```
{
 "version": 1,
 "sequence": 0,
 "streamingFormat": 1,
 "streamingFormatVersion": "0.2",
 "supportsDeltaUpdates": true,
 "renderGroup": 1,
 "packaging": "loc",
 "tracks":[

...
```

```
{
  "version": 1,
  "sequence": 0,
  "catalogs": [
    {
      "name": "catalog-for-format-one",
      "namespace": "sports.example.com/games/08-08-23/live",
      "streamingFormat":1,
      "streamingFormatVersion": "0.2"
      "streamingFormatVersion": "0.2",
      "supportsDeltaUpdates": true,
    },
    {
      "name": "catalog-for-format-five",
      "namespace": "chat.example.com/games/08-08-23/chat",
      "streamingFormat":5,
      "streamingFormatVersion": "1.6.2"
    }
  ]
}
```

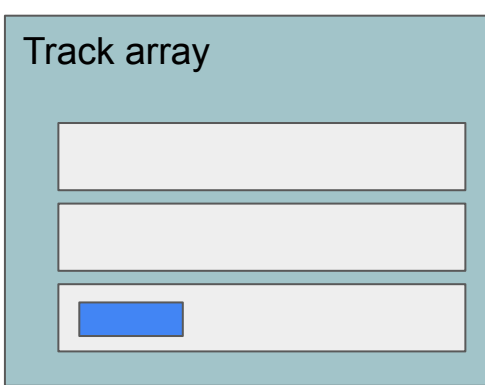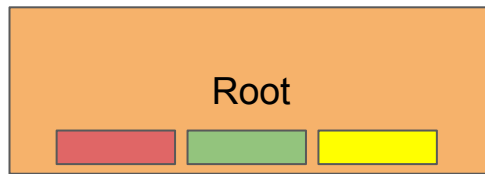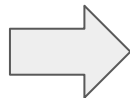# Open PR #[42](): Add a new root object to hold inheritable track fields.

- In the current design, any track fields such as selectionParams, initTrack, renderGroup, packaging etc can be added at the root level.
- **This design does not promote extensibility as it prohibits adding future fields to the root that should not be interpreted as inheritable track fields**.
- PR adds a new root object called "commonTrackProperties" to explicitly hold fields intended to be inherited by all tracks.
- These common objects will usually be K/V fields, however they may also be more complex custom-defined objects.

```json
{
    "version": 1,
    "streamingFormat": 1,
    "streamingFormatVersion": "0.2",
    "commonTrackFields": {
        "namespace": "example.com/12345",
        "packaging": "cmaf",
        "renderGroup": 1,
        "altGroup": 1
    },
    "tracks": [
        {
            "name": "video_4k",
            "selectionParams": {
                "codec": "avc1.640033",
                "mimeType": "video/mp4",
                "width": 3840,
                "height": 2160,
                "framerate": 30,
                "bitrate": 14931538
            },
```
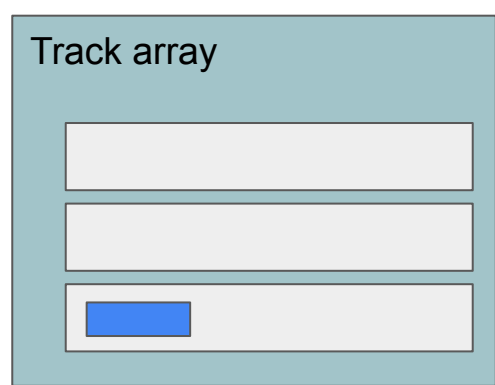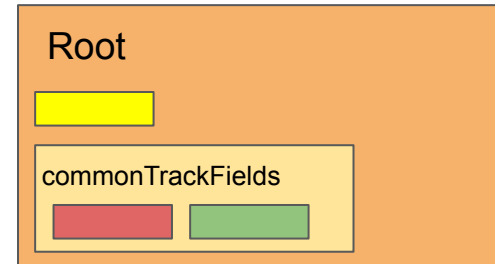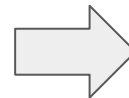
Evolution of track field inheritance

Root

Track array
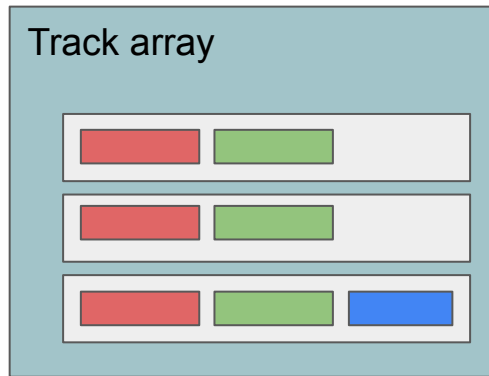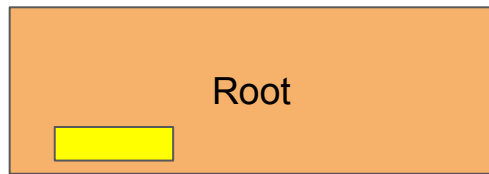
Non-inheritance
(still valid)

Root

Track array

Prior inheritance
scheme

Root

commonTrackFields

Track array

PR#42 inheritance
scheme

Call for Adoption

Chairs initiated a call-for-adoption on Feb 19 for Internet Draft available at https://datatracker.ietf.org/doc/draft-wilaw-moq-catalogformat/02/

Positive feedback received.

Chairs issued **notification of adoption** on March 4th.

Thanks y'all!

New draft available at https://datatracker.ietf.org/doc/draft-ietf-moq-catalog after IETF #119

Please review current PRs and add issues/contributions of your own.