



News Distribution Rules draft v2.5

For

Public Discussion

NDR is a proposed model of data representation and rules which allow a distribution point to determine if it is allowed to forward, redistribute or incorporate the described content in derivative works.

Benefits:

- 1) Compatible with widely established broadcast editorial models
- 2) Extensible model allows broad application
- 3) Machine interpretable
- 4) Transportable
- 5) Human readable as an option



Disclaimer:

This document uses the names of specific ownership groups, networks and stations as a means of clearer explanation and description of potential use cases and application of NDR. This document does not represent or describe any actual or specific relationship between stations and groups, including business practices. This document also does not imply endorsement by any of the groups or stations listed.

Overview:

This is a discussion of how an established and widely adopted model used to routinely control distribution of video news content in network/affiliate environments can serve as a starting point for the evolution of a machine readable scheme which can be applied to any number of traditional (broadcast) and digital distribution channels and content types.

This document discusses four areas.

- 1) Data Model
- 2) Representation
- 3) Business Rules
- 4) Examples

The intended focus of this document is on the Data Model and Business Rules. Representation is, arguably, the lesser item of importance and could vary in any number of implementations. In this document YAML is used to represent key/value pairs in the proposed Data Model primarily for ease of representation. Use of YAML here is not intended to be proscriptive or an ultimate choice for implementation.

Background:

When sharing content with other stations it is important to include distribution restrictions and other information in the textual element of the story that controls both text and media. While content given to one station to another generally implies no or few restrictions for the receiving station's use, problems arise when the first receiving station forwards material to a second receiving station without the initial distributor's foreknowledge.

The classic (hypothetical) example is a station in Dallas who might share exclusive video of a breaking news event with a network news affiliate service. That affiliate service in turn immediately shares this video with all of its affiliates - a list of stations that includes every other station in the Dallas market.

Suddenly, the Dallas station finds its own “exclusive” video on the channels of every other station in their local Dallas market.

A situation like this would cause the Dallas station to lose its competitive stance as otherwise market exclusive video is provided to competitors. It would also argue against future use of the affiliate news service because anyone sharing content with the news service would also give up the obvious value of future exclusive local video.

This situation is routinely avoided by the application of distribution restrictions, commonly called “Embargoes,” which are implied through common convention or attached to content in plain text.

While these restrictions are commonly included in attached text descriptions, or embedded in the visual field, they do not contain enough unambiguous structure to be reliably interpreted by software. As the volume of content moved between sites increases dramatically, often due to automation and file transfers, the News industry needs to give machines the ability to understand these restrictions.

Unfortunately, there is no existing system, format or convention common to both users and machines, by which unambiguous distribution restrictions can be described and attached to news material.

The existing paradigm used by journalists in North America to describe restrictions is based on individual stations and distribution groups and the concept of “Allowed” and “Embargoed,” where embargoed stations may not use the content. Often there is a strong preference that embargoed stations will not ever be made aware of the restricted content.

In the previous example involving the station in Dallas, the problem of re-distribution through an affiliate news service (ABC) to competitors in Dallas is routinely avoided by attaching a restriction similar to this:

Allow: ABC, SBG
Embargo: Dallas

Here “ABC” and “SBG” both represent station groups. In the existing paradigm, this would be expected to appear in the text attached to the story, and often also in a visual slate that proceeds the video.

News Distribution Rule (NDR) Purpose:

Stories passing through distribution systems need to contain descriptors, provided by the sender, which allows to receiver to clearly and unambiguously determine whether or not the receiving party is an intended recipient, and if so what conditions, if any, are placed upon the story's use.

These descriptors will largely model the de-facto standards for conveying distribution restrictions in use today. A standard for unambiguous representation and applications of this information does not currently exist. The purpose of this document is to suggest a solution to this problem.

Editorial Drivers for NDR:

1. Stations need the ability to clearly and unambiguously define and attach distribution restrictions to content shared with others. This protects their content from competitive and unintended use.
2. Stations need the ability to clearly and unambiguously receive distribution restrictions attached to content. This allows them to avoid unintentional use of content in ways not intended by the distributor, and thus better conform to editorial standards and legal requirements.

Technical Drivers NDR:

1. Integration with a variety of production and distribution systems drives NDR-type descriptions and rules which must be unambiguously recognized and interpreted by software.
2. Various distribution systems have a need to implement transport filters based on NDR-type data and rules.

NDR Data Model:

The data model can be viewed in two parts. The first is metadata descriptive of a story, which itself is composed of text and media. The second part of the model is metadata descriptive of rules which control the distribution and use of the story.

NDR – the primary wrapper

- time** – timestamp indicating time of acquisition or distribution
- distributor** – the entity from which this story is sent
- slug** – story slug intended as a label for humans, not to be used for linkage or id
- storyID** – story globally unique ID intended for use by machines for linkage and id
- source** – the entity which created this original or derivative story
- contact** – unstructured contact information intended for the convenience of humans

restrictions – optional. If not present, no restrictions are assumed or implied

- permission** – multiple permissions may be present
 - allowed** – list of groups and ID's allowed, subject to constraints
 - embargoed** – list of groups and ID's not permitted to use the story
 - constraints** – limitations to use
 - no use before** – date, time, time zone offset
 - no use after** – date, time, time zone offset
 - video broadcast** – Terrestrial, Satellite or Cable broadcast
 - radio broadcast** – Terrestrial, Satellite or Cable broadcast
 - online** – any distribution method using the Internet
 - print** – papers and magazines
 - derivative use** – can be used as components to new stories
 - derivative archive** – derivative stories can be archived
 - literal archive** – the unmodified story can be archived
 - courtesy** – visual attribution must be given to the source
 - mandatory** – yes or no
 - text** – text to be displayed in the visual channel
 - graphic link** – URL graphic to use instead of text
 - insertion tc** – time code that courtesy is to begin
 - insertion duration** – number of seconds
 - event** – constraints on usage over time, such as in sports
 - event name** – human readable name, not for tracking
 - event ID** – unique ID used for tracking
 - max mins per day** – number of minutes from this event
 - max mins per show** – number of minutes from this event

- location** – intended to convey the approximate location of the story, or source
- latitude** – in decimal degrees
- longitude** – in decimal degrees
- elevation** – in meters
- media** – more detailed information about the media and internal components
- media ID** – globally unique ID of the media
- link** – URL, URI, or filename
- SHA512** – SHA-512 hash of the media file
- fprint** – identification of the file provided by the fingerprint service
- attribution** – intended to describe the sequence of component media clips
 - tc** – time code
 - source** – the entity that created this clip
 - note** – unstructured intended for humans, not machines

These fields should be mapped to fields in existing schemas, where available.

Not all fields are required.

Additional fields should be considered for support of a wide range of applications.

Station & Group Identification:

Each station should recognize its own ID and any Groups to which it belongs.

Station ID – KOMO

Group Membership – SBG, ABC, CNN, Seattle, Washington State, USA Country

No formal structure for an application’s internal representation of a list of this data is suggested at this time, although receiving sites will evaluate this information with station and group IDs present in **NDR restrictions**.

Metadata Representation:

NDR can be represented in any number of data formats. In this document discussion of NDR will generally employ YAML as the markup format.

The primary reason YAML was selected for use in this discussion is because it clearly represents key/value pairs in a human readable format.

It has the further, and perhaps very practical benefit of being transportable in text-based systems presently used for news production and transmission, such as iNEWS, ENPS and wire transmission formats.

YAML is not proscribed for use with all applications of NDR. It is applied in this document primarily as a convenience.

A description of [YAML from Wikipedia](#):

“YAML syntax was designed to be easily mapped to data types common to most high-level languages: [list](#), [associative array](#), and [scalar](#).^[4] Its familiar indented outline and lean appearance make it especially suited for tasks where humans are likely to view or edit data structures, such as configuration files, dumping during debugging, and document headers (e.g. the headers found on most e-mails are very close to YAML). Although well-suited for hierarchical data representation, it also has a compact syntax for relational data.^[5] Its line and whitespace delimiters make it friendly to ad hoc [grep/Python/Perl/Ruby](#) operations. A major part of its accessibility comes from eschewing the use of enclosures such as quotation marks, brackets, braces, and open/close-tags, which can be hard for the human eye to balance in nested hierarchies.”

Example YAML representation of NDR:

```
# live validation of sample YAML v1.2 format at http://yaml-online-parser.appspot.com
---
NDR:
  v: 1.0
  time: 2015-11-14 21:59:43.10 -8 #Pacific Time
  distributor: SBG
  slug: "Seahawk Artist Pkg"
  storyID: 12345678901234567890123456789
  source: KOMO
  contact: newsdept@komo.com / (555) 555-5555
  restrictions:
    - permission:
        allowed: SBG #All Sinclair
    - permission:
        allowed: ABC #News One with courtesy
        embargo: Seattle
  constraints:
    no use before: 2015-11-14 21:59:43.10 -5
    no use after: 2015-11-21 21:59:43.10 -5
    video broadcast: Yes
    radio broadcast: No
    online: No
    print: No
    derivative use: No
    derivative archive: No
    literal archive: No
    courtesy:
      mandatory: Yes
      text: KOMO-TV
      graphic link: https://www.komo.com/HD-Courtesy.jpg #Graphic used for attribution
      insertion tc: 47.03
      insertion duration: 5
  event:
    event name: Olympics day 4
    event ID: OlympicsD4
    max mins per day: 10
    max mins per show: 2
  location:
    lat: 47.742892
    lon: -122.731893
    el: 3.014
  ...
  #!begin YAML stream
  #!indicates first YAML stream
  #!version of NDR
  #!time of capture or distribution
  #!owner or distributor
  #mutable slug for humans
  #immutable ID for machines
  #!source ID for humans and machines
  #contact info for humans
  #!List of Permissions
  #At least one permission required
  #Comment is included for humans
  #Second permission
  #Comment is included for humans
  #Comment is included for humans
  #This applies further granularity
  #No use before this time
  #No use after this time
  #Video broadcast distribution
  #Radio broadcast distribution
  #Online distribution (web & mobile)
  #Print/Newspaper distribution
  #Included in derivative works
  #Derivative works can be archived
  #This story may be archived
  #Public attribution
  #Option if mandatory = no
  #Text used for attribution
  #Time at which insert to begin
  #Seconds courtesy insert to last
  #*Event
  #*mutable name for humans
  #!immutable ID for machines
  #max total mins use from event/day
  #max total mins use from event/show
  #GeoTagging
  #Latitude
  #Longitude
  #Elevation
  #End YAML stream
  #Begin Textual body of Story/Script
```

Rowan Carey's found a niche... Turning big moments from Seattle Seahawks games into special moments on the canvas.

Sounds familiar.

His work gaining the approval of the toughest of possible critics who doesn't hold back his opinion.

This is the painting that brought Carey and Sherman together after just a matter of hours... A big interception during the hawks' thanksgiving day beatdown of San Francisco.

Carey was inspired to paint it the following sunday - when there was no seattle game to watch. Carey's already hard at work on his next painting.

This one will depict the big tip... From Richard Sherman to Malcom Smith - at last year's N-F-C championship game.

Sherman's already signed the canvas before he's been added to it.

And has asked to see the finished product.

Until now, art has only been a hobby for carey.

The 27-year-old makes a living at the family business... Building retaining walls.

Stout defense runs deep in art---and football.

But the attention he's been getting from his hawks portraits could change all that.

```

#End Textual body of Story/Script
---
NDR media:
v: 1.0
storyID: 12345678901234567890123456789
media:
  - media ID:
    link: http://SBG/KOMO/media/12345678901234567890123456789.jpg
    SHA512:
    3c96be0ba2f4abe2ee888d0d2ec43cde5612b527372d28aa26ac28ac2108bf36de136f6abdd730e980d27406ad51dc4
    b4a9626e268a5b550d6e4c7669f66bade
    fprint: 124322349320232357323
    - media ID:
    link: http://SBG/KOMO/media/12345678901234567890123456789.mpg
    SHA512:
    5c96be0ba2f4abe2ee888d0d2ec43cde5612b527372d28aa26ac28ac2108bf36de136f6abdd730e980d27406ad51dc4
    b4a9626e268a5b550d6e4c7669f66bad1
    fprint: 124322349320232357323
    attributions:
    - attribution: &KOMO-0001
      tc: 00:00:00.00
      source: KOMO
      slug: Fire Shoot
      note: Fire Shoot
    - attribution: &ABC-0002
      tc: 00:00:10.00
      source: ABC
      slug: Congress React
      note: Congress React
    - attribution:
      <<: *KOMO-0001
      tc: 00:00:20.00
    - attribution:
      <<: *ABC-0002
      tc: 00:00:30.00
    - attribution:
      <<: *KOMO-0001
      tc: 00:00:40.00
  ...

```

...

```

# Compressed version of NDR media: This would replace NDR media: if present
# Compressed form is preferred, as this metadata is of primary use to machines
# Users will be instructed to ignore this random text if legacy UI's can't hide it
NDR compressed: |

```

```

H4sIAHzE4VYCA8WQ3WrbQBCF7/UUgy96UZC0mv2RtPgmSulaSgnET7A/I1ttLBlpbejbdyWDW4wRLhQqhFz2zPnOnEnTNOn
8AHvyrDGQnDQUGUvG0A8/v3yKBXihVvN7MZfcu5KANIzAGJLrAde2+6Hh10IB53nm8eX/Ovrt9d8vpMvIrPvh+1M2Hx+kA
Vq4K5Wlpg12AhjCYmqvLMiZnBnSepCrQSS16ix8oYVmbF02HBKttw5angqlHGel9yRnUVW0vBlPGy8E5YYWqFilBVRlopM
VckXKlU3Shljad5mOYwtF2YtiE4xlFrjgw5cInGzz+Nv7+KL/9v/OKu+AAmhKGlX9D23XheQfqnpuHdtIGUMXYmTk9wGhjT
85sxdtHHMJDZazil49G8/5b74+BIwwS6iF0forR6bgeCza7vw+qm+cPj0+SNN7yLv/GonGvrr77bDjS08EbG3bS/dKzXGj4
u7QEvsywRFsLwuwBLI4izkGVZ8gsgyuz+sGgQAAA==
...

```

Business Rules:

Fundamentally, Sites must also agree to use a standard set of rules to evaluate a received rule with a list of IDs and groups to which the site relates.



Evaluation of Business Rules:

The bottom to top order of evaluation is a concession to human readability.

Humans want and need to be able to read these rules in some contexts, and by convention, look for the most significant rule to appear first.

If we apply the rules sequentially, the most significant rule often ends up being the last one applied. We've swapped the order of evaluation from bottom to top so that the most significant rule appears first in the list.

This order of representation closely parallels existing conventions in broadcast.

Take this example:

```
restriction details:  
- permission:  
  allowed: SBG  
- permission:  
  allowed: ABC  
  embargo: Seattle  
constraints:  
  no use before: 2015-11-14 21:59:43.10 -8
```

If we evaluate this from the top down, first we give unconditional access to all Sinclair stations. The second rule then applies a time restriction to ABC stations, with the unintended consequence of applying the time restriction to all Sinclair stations with ABC affiliations. It would also specifically embargo all ABC stations in Seattle. This is not what was intended.

Evaluated from the bottom up (as intended), we first give access to all ABC stations, then remove access to ABC stations in Seattle, then finally give access to all Sinclair stations. This overrides restrictions on any Sinclair stations affiliated with ABC or located in Seattle.

Intended Applications of NDR:

Fundamentally, NDR metadata and the associated rules defined for evaluation are intended to connect machine actionable usage restrictions to specific media files.

In some applications the internal representation of this data may never be significant so long as *NDR* rules are evaluated in the proscribed manner.

In other applications, it will be necessary to map internal fields to the fields used for NDR. For example, story fields within iNEWS could be created which will facilitate user and automated input of information from which NDR metadata can be derived.

In other applications, it will be critical that data be represented in a standard way in order to facilitate exchange of NDR information between systems. In fact, this document anticipates the need to exchange this information using systems that may have no specific knowledge or designed compatibility with this information. Again, iNEWS is an example.

Examples and Potential Use Cases:

1. Minimal default NDR metadata associated with media by camera at time of field acquisition.

This will identify the media as belonging to KOMO, identify groups KOMO routinely trades content with, and apply a routine embargo of other stations in the Seattle market. Placing this into the media at the time of acquisition enables all downstream equipment to identify KOMO as the source along with the basic default distribution restrictions. This can also protect raw content from escaping into the wild without some control.

```
---
NDR header:
  v: 1.0
  time: 2015-11-16 21:59:43.10 -8 #Pacific Time
  storyID: 12345678901234567890123456789
  distributor: KOMO
  slug: "Field Camera 7"
  source: KOMO
  contact: newsdept@komo.com / (555) 555-5555

  restriction details:
    - permission:
      allowed: SBG
    - permission:
      allowed: CNN,ABC
      embargo: Seattle
      constraints:
        literal archive: no
        derivative use: yes
...

```

2. Content produced by KOMO which includes material from ABC.

This will identify the story as produced by KOMO with content from both KOMO and ABC. Only other SBG affiliates who are not CBS, FOX or NBC affiliates may use this story.

```
---
NDR header:
  v: 1.0
  time: 2015-11-16 21:59:43.10 -8 #Pacific Time
  distributor: SBG
  slug: "Seahawk Artist Pkg"
  storyID: 12345678901234567890123456789
  source: KOMO, ABC
  contact: newsdept@komo.com / (555) 555-5555

  restriction details:
    - permission:
      allowed: SBG
      embargo: CBS,FOX,NBC
...
```

3. KOMO content to be distributed to SBG station group and also to the ABC affiliate feed. While SBG can use the material immediately, ABC cannot use the material before a certain date/time. In practice, the date/time constraint can be used by SBG distribution systems to hold the material so that it is not transmitted to ABC until this time:

```
---
NDR header:
  v: 1.0
  time: 2015-11-14 21:59:43.10 -8 #Pacific Time
  distributor: SBG
  slug: "Seahawk Artist Pkg"
  storyID: 12345678901234567890123456789
  source: KOMO
  contact: newsdept@komo.com / (555) 555-5555

  restriction details:
    - permission:
      allowed: SBG
    - permission:
      allowed: ABC
    constraints:
      no use before: 2015-11-14 21:59:43.10 -8
...
```

4. KOMO content distributed to SBG group and ABC with additional restrictions:

Building on Use Case #3, this example imposes additional restrictions on both the begin and end time of use, allows distribution/use for video broadcast, but not radio, online or print. The story cannot be used in derivative works and it may not be archived by receiving systems. A courtesy is required at a specific time and for a specific duration. A link to the graphic to be used in the courtesy is included.

```
---
NDR header:
  v: 1.0
  time: 2015-11-14 21:59:43.10 -8 #Pacific Time
  by: SBG
  slug: "Seahawk Artist Pkg"
  storyID: 12345678901234567890123456789
  source: KOMO
  contact: newsdept@komo.com / (555) 555-5555

restriction details:
  - permission:
    allowed: SBG
  - permission:
    allowed: ABC
constraints:
  no use before: 2015-11-14 21:59:43.10 -5
  no use after: 2015-11-21 21:59:43.10 -5
  video broadcast: Yes
  radio broadcast: No
  online: No
  print: No
  derivative use allowed: No
  derivative archive: No
  literal archive: No
courtesy:
  mandatory: Yes
  text: KOMO-TV
  graphic: https://www.komo.com/HD-Courtesy.jpg
  insertion: 47.03
  minimum duration: 05
...
```

5. KOMO story including ABC material distributed to SBG group and ABC with attributions of sub-clips:

Building on Use Cases #3 and #4, this example includes specific attributions for the four sub-clips. Each clip is 10 seconds. KOMO is the source for the first and third sub-clips. ABC is the source for the second and fourth sub-clips. Note here that this technical information related to media is represented as a separate YAML stream. This is for convenience only so this information, of less interest to humans, can be inserted below the body of a story in legacy systems where it cannot yet be included as fielded metadata.

```
---
NDR header:
  v: 1.0
  time: 2015-11-14 21:59:43.10 -8 #Pacific Time
  by: SBG
  slug: "Seahawk Artist Pkg"
  storyID: 12345678901234567890123456789
  source: KOMO, ABC
  contact: newsdept@komo.com / (555) 555-5555

restriction details:
  - permission:
    allowed: SBG
  - permission:
    allowed: ABC
  constraints:
    no use before: 2015-11-14 21:59:43.10 -5
    no use after: 2015-11-21 21:59:43.10 -5
    video broadcast: Yes
    radio broadcast: No
    online: No
    print: No
    derivative use allowed: No
    derivative archive: No
    literal archive: No
  courtesy:
    mandatory: Yes
    text: KOMO-TV
    graphic: https://www.komo.com/HD-Courtesy.jpg
    insertion: 47.03
    minimum duration: 05

...
---
NDR media:
  v: 1.0
  storyID: 12345678901234567890123456789
  media:
    - media ID:
      link: http://SBG/KOMO/media/12345678901234567890123456789.h264
      SHA512:
3c96be0ba2f4abe2ee888d0d2ec43cde5612b527372d28aa26ac28ac2108bf36de136f6abdd730e980d27406a
d51dc4b4a9626e268a5b550d6e4c7669f66bade
      fprint: 124322349320232357323

    - media ID:
      link: http://SBG/KOMO/media/282349827349234.mpg
```

SHA512:
5c96be0ba2f4abe2ee888d0d2ec43cde5612b527372d28aa26ac28ac2108bf36de136f6abdd730e980d27406a
d51dc4b4a9626e268a5b550d6e4c7669f66bad1
fprint: 124322349320232357323

attributions:
- attribution: &KOMO-0001
tc: 00:00:00.00
stream: visual
source: KOMO
note: "Fire Shoot"

- attribution: &ABC-0002
tc: 00:00:10.00
stream: visual
source: ABC
note: "Congress React"

- attribution:
<<: *KOMO-0001
tc: 00:00:20.00

- attribution:
<<: *ABC-0002
tc: 00:00:30.00

...

NDR compressed: | #This is an alternate, compressed representation of NDR media:

```
H4sIAGWb4VYCA8WQ30rkMBTGn6DvcPDCC6FtepKcpsEbdVkvWYSdJ8i/Ok
WnHdqM4NubdmBWZzhdrzaUNPnI+X3nO3meZ70fYRN8ZzRkrxqqgmVTHMa3
+x/pglxIqlXDjpyyfvUGkO8BkErSDeCl6581rGpc6rJcXd+WD4+/HsvlTX
kSWayRxIJY3V3JCjVw15ANzBpshbEBQ1BKeeyxOMGdD5IqtBJrXqNHZQyS
cenvsGLKtpx8qDilZKz3NWehUam0FoyM15V3wgrTEFJAUKzaKZmnIFxN1L
RE1viwNNNux6P8zgEx9Rrw5EhRy7rtGXfHACqmaBSy6JJp2KzffqUWP7f
xNW/JQYwMY6d3cVu6Kd96vyjpuF8Dp0zxvbIeUWngTG9fAVjB32KYzAbDa
/dtDMvf+RhN7qgYQYdxH6ISTr72Y0BVuthiGfZUfer65vZHI+YV98xT5yv
3jdD/zSGaYLfwbjj/oeSy0sNF6cmgUszf0WciMMXQ1EU2TuD5JNN0AMAAA
==
```

...

6. KOMO content distributed to CNN and ABC affiliate services.

Story produced by KOMO. SBG stations have no restrictions. CNN and ABC stations can use after a certain time, but are not allowed to archive. Use in Seattle by CNN and ABC affiliates is embargoed. Because the SBG group is specifically allowed use in the higher permission, the ABC embargo to Seattle does not create a conflict with KOMO's own use.

```
---
NDR header:
  v: 1.0
  time: 2015-11-14 21:59:43.10 -8 #Pacific Time
  distributor: SBG
  slug: "Seahawk Artist Pkg"
  storyID: 12345678901234567890123456789
  source: KOMO
  contact: newsdept@komo.com / (555) 555-5555

  restriction details:
    - permission:
      allowed: SBG
    - permission:
      allowed: CNN, ABC
      embargo: Seattle
      constraints:
        no use before: 2015-11-14 21:59:43.10 -5
        literal archive: no
        derivative use: yes
        derivative archive: yes
...

```

7. KOMO live program captured and segmented

A KOMO live program is captured in a recording to single file. It is assumed the system creating this metadata (especially the attribution node) includes its own mechanism applied to determine the exact time relative to the start of media at which one story/segment begins and another ends.

Here only a single marker is included in each event to indicate the start/segmentation time. If start time and duration are required for each event, then a duration can be added to each segment. Additional descriptive metadata fields can also be added.

Two YAML streams are used for this example to remain consistent with prior application to use cases involving story text. Story text could be added at the attribution node if text were needed for each story captured in the live stream. Links between story text and media segmentation can also be created if beneficial or to make a flat document more readable.

Note that the second stream, “NDR media” which contains the segmented attributions, may also be alternately represented in compressed form. The compressed examples in this document were created by gzip compressing the NDR media: stream, then encoding it as base64. As mentioned early, this has certain advantages when mixing human readable text and machine-specific information, such as segmentation. Compressed text also has the benefit of generally being ignored by indexing engines which might otherwise be effected by the frequent appearance of words or terms in the segmentation node.

```
---
NDR:
  v: 1.0
  time: 2015-11-16 21:59:43.10 -8 #Pacific Time
  distributor: SBG
  slug: "10pm News"
  storyID: 12345678901234567890123456789
  source: KOMO, ABC, CNN
  contact: newsdept@komo.com / (555) 555-5555

  restriction details:
    - permission:
      allowed: SBG
...

---
NDR media:
  v: 1.0
  storyID: 12345678901234567890123456789
  media:
    - media ID:
      link: http://SBG/KOMO/media/12345678901234567890123456789.h264
```

SHA512:
3c96be0ba2f4abe2ee888d0d2ec43cde5612b527372d28aa26ac28ac2108bf36de136f6abdd730e980d27406ad51dc4
b4a9626e268a5b550d6e4c7669f66bade
fprint: 124322349320232357323

attributions:

- attribution:
 - tc: 00:00:00.00
 - source: KOMO
 - slug: Downtown Fire
 - note: Fire Shoot

- attribution:
 - tc: 00:00:47.00
 - source: KOMO, ABC
 - slug: Congress React
 - note: Congress React

- attribution:
 - tc: 00:00:52.00
 - source: ABC
 - slug: Canada Forest Fire

- attribution:
 - tc: 00:01:30.00
 - source: CNN
 - slug: Singapore bubble gum

- attribution:
 - tc: 00:02:00.00
 - source: KOMO
 - slug: Downtown Fire
 - note: Robbery

- attribution:
 - tc: 00:02:47.00
 - source: KOMO, ABC
 - slug: LA smog
 - note: Congress React

- attribution:
 - tc: 00:03:52.00
 - source: Florida elections
 - slug: Canada Forest Fire

- attribution:
 - tc: 00:04:30.00
 - source: CNN
 - slug: Tahitian storm

- attribution:
 - tc: 00:05:00.00
 - source: KOMO
 - slug: Downtown Fire
 - note: Fire Shoot

- attribution:
 - tc: 00:05:47.00
 - source: KOMO, ABC
 - slug: Congress React
 - note: Congress React

- attribution:
 - tc: 00:05:52.00
 - source: ABC
 - slug: Canada Forest Fire

- attribution:
tc: 00:06:30.00
source: CNN
slug: Singapore bubble gum

- attribution:
tc: 00:07:00.00
source: KOMO
slug: Downtown Fire
note: Robbery

- attribution:
tc: 00:08:47.00
source: KOMO, ABC
slug: LA smog
note: Congress React

- attribution:
tc: 00:09:52.00
source: Florida elections
slug: Canada Forest Fire

- attribution:
tc: 00:10:30.00
source: CNN
slug: Tahitian storm

...

NDR compressed: | #optional compressed representation of NDR media
H4sIAJY241YCA8WU246bMBCG73mKeYACxifAd9ms0lZtd6VNX8AnCCrBEZhW+/Y1REq7Ubai7SpBnDxj+zPz+ye046gzPey
taaSA6LuALEHR4F3//PE+NDChjOdFiS68RcdREUB8nADckNACaJvum4Cd9weRptu79+mnxy+P6dwn/eOUyQ5z0k+x/bBiGR
ZAdMmVRUriikplsbVFURhksNWUaGMZz7BiOCc5NriQEnOpw1PjDBWqItzYjPCKS2VMTpAtizA0p4hLwzKjqaKy5JhbzAvJF
GPiCetlznIzca6ksfNiqPfdH4qByU4rLUkGGGCCcvDLZq7SO/7Ro2+cd1wLEL8e+wYmg6vBSAk5jNB6BQf3NhrK2Aq1a9g
O9YC7t2PzocLNk1vT7n0+dB9CsF255yP1lFp/hr1Hazulmfotevq3g4DPFmp/Rn7LLmMz/A1/gWy7KSRsHGB4F98+RJOJs
F6q4fHs4426ar5SFQQI1KtRbqcR8txeC3EfHJKWX752gz8u8U/LyCYe/q/5eOvCLdpnV9E5SyrDXz9n9TIeliIb/KXEmb2c
H099rDKbuEwm5iRnZjM7IrmZffx4z59c1Y3MqM5S3MmKF/NmOSJD8Bg1XEyWwIAAA=
...

8. Use of content in a newsroom which produces content for a duopoly or LMA

Restriction details are to be evaluated in the context of a distributor. In the simplest case a newsroom produces content for distribution by a single television station, identified by a single set of call letters.

In other cases, a single newsroom might produce content for distribution by two or more television stations or through other distribution channels.

Content with this description arrives in a newsroom which produces content for both WSYX and WTTE. WSYX is an ABC affiliate. WTTE is a Fox affiliate. Both are owned by Sinclair.

When determining if content can be used on a specific distribution channel, the NDR descriptor would be evaluated in the context of the list of ID's and Groups associated with each station.

WSYX would be associated with the following groups:

```
SBG
ABC
WSYX
Columbus City
Ohio State
USA Country
```

WTTE would be associated with the following groups:

```
SBG
FOX
WTTE
Columbus City
Ohio State
USA Country
```

Here is an example NDR which might arrive attached to a story fed on an internal SBG Wire:

```
restriction details:
- permission:
  allowed: SBG
  embargo: CBS,FOX,NBC
- permission:
  allowed: ABC
  embargo: Seattle
constraints:
  no use before: 2015-11-14 21:59:43.10 -8
```

When evaluated in the context of the Groups and ID's associated with WSYX (and working from the bottom up), we first see that WSYX is a member of the ABC group. ABC group members are allowed to use the content but with a time restriction. In the next (top) permission we see the SBG group which will allow WSYX use and drop the time restriction. WSYX does not belong to

any of the three embargoed networks, so these have no effect. The result is that WSYX is allowed to use this content.

When evaluated in the context of the Groups and ID's associated with WTTE (and again evaluating permissions from the bottom up), we see the first permission associated with ABC and Seattle does not apply. In the second (topmost) permission, we note WTTE is a member of the SBG group which would initially allow use of this content. However, we look further to the embargo and note that WTTE is also a member of FOX. Since within each permission an embargo takes precedence over an allow, WTTE will not be permitted to use this content.

It has been suggested that a distribution channel's groups and ID's might be associated to specific rundowns within an NRCS. When a story is dropped into a rundown, the NRCS could then evaluate restrictions in the story content to the groups associated with each rundown. In the case of the Columbus newsroom, the NRCS could raise an alert or block attempts to add this example story to a rundown used to produce a WTTE newscast. Likewise, it would allow this example story to be copied into a WSYX rundown. In this way content for two stations, using different affiliate feed services, could be more easily (and safely) be produced within a single NRCS and Production Server environment.

9. Using an NRCS to drive addition of NDR descriptors to stories

It is possible to allow users to enter field-level metadata into NRCS stories to enable external systems to create standardized NDR descriptors for use by other systems.

This field could be added to an NRCS story template at KOMO:

```
[Includes content from:] = ABC
```

An external system finding this metadata field in a KOMO story could create the following NDR descriptor within the context of KOMO production. This descriptor would then travel with the story as it is carried by various distribution channels, including local production at KOMO, transmission to other SBG stations via internal Wire, and transmission to external affiliate services, such as ABC, CBS, NBC, FOX and CNN.

```
restriction details:  
- permission:  
  allowed: SBG  
  embargo: CBS, FOX, NBC  
- permission:  
  allowed: ABC  
  embargo: Seattle
```

Such literal rules convey much clearer meaning to both people and machines, critically because they make it clear which groups **should not** use content. This can simplify the logic applied by downstream systems.