Automated Content Notice System (ACNS) 2.0

Notices

Version	Date	Description
1.0	February 11, 2009	Original Version
1.1	April 26, 2010	Added Usenet support and ability to include (VersionData) or reference (VersionDataLoc) copy of infringing data. These changes are backwards compatible.
1.1a	June 23, 2010	Added recommended practice for AlsoSeen.
1.2	November 11, 2011	Cumulative changes. Changed Status message to better support new requirements from ISPs and others. Added NoticeStatus message as recommended replacement for StatusResponse. Added schemaVersion attributes to messages. Changes FileSize to accommodate files larger than xs:int's maximum value. Added Declaration. Corrected StatusDisposition error on spec (correct in schema). This is targeted for implementation. Implementers should provide feedback, but also be aware changes may occur as issues are found in implementation.

CONTENTS

1 BACKGROUND

The Automated Copyright Notice System was developed in 2003 by NBC Universal and Universal Music Group (UMG) to help facilitate the efficient handling of copyright infringement notices at ISPs. http://mpto.unistudios.com/xml/ From that site:

ACNS stands for Automated Copyright Notice System. It's an open source, royalty free system that universities, ISP's, or anyone that handles large volumes of copyright notices can implement on their network to increase the efficiency and reduce the costs of responding to the notices. The system is a flexible design so that it can be implemented on just about any network, using already available network equipment such as routers and packet shapers. It is not intrusive and does not invade the privacy of the networks users, and it lets the university or ISP enforce its own policies with regard to network abuse and copyright infringement. The system could also be utilized to handle abuse complaints, viruses, worms, trojans, and other malicious network activity. Below you can find links to more information about ACNS and the XML that enables it.

Please refer to that site for background and previous versions.

ACNS has been successfully deployed at many locations.

The document expands the original ACNS (0.7) to ACNS 2.0. The extensions were motivated by feedback from Higher Education, ISPs and notice generation agents who wanted additional information to be carried within the basic framework.

ACNS 2.0 is designed to be fully backwards compatible with ACNS 0.7.

1.1 ACNS Functional Overview

The following diagram illustrates some general concepts around ACNS.

A content owner or its agent would be looking for inappropriate uses of content on the Internet. Once the parties involved are identified, a Notice Generation system would send a notice including ACNS encoded information about the inappropriate use. An automated Notice Handling system would receive the notice. One would expect to find a Notice Handling system operated as part of an ISP, a campus network, or a content server system (e.g., user generated content). Notice handling will work in conjunction with the Local Network Infrastructure to identify subscribers and an adjudication system (e.g., a campus judicial system) to take appropriate actions.

ACNS 2.0 supports mechanisms to acknowledge and provide status. ACNS 2.0 also provides the ability to communicate status within an ISP or campus judicial system.
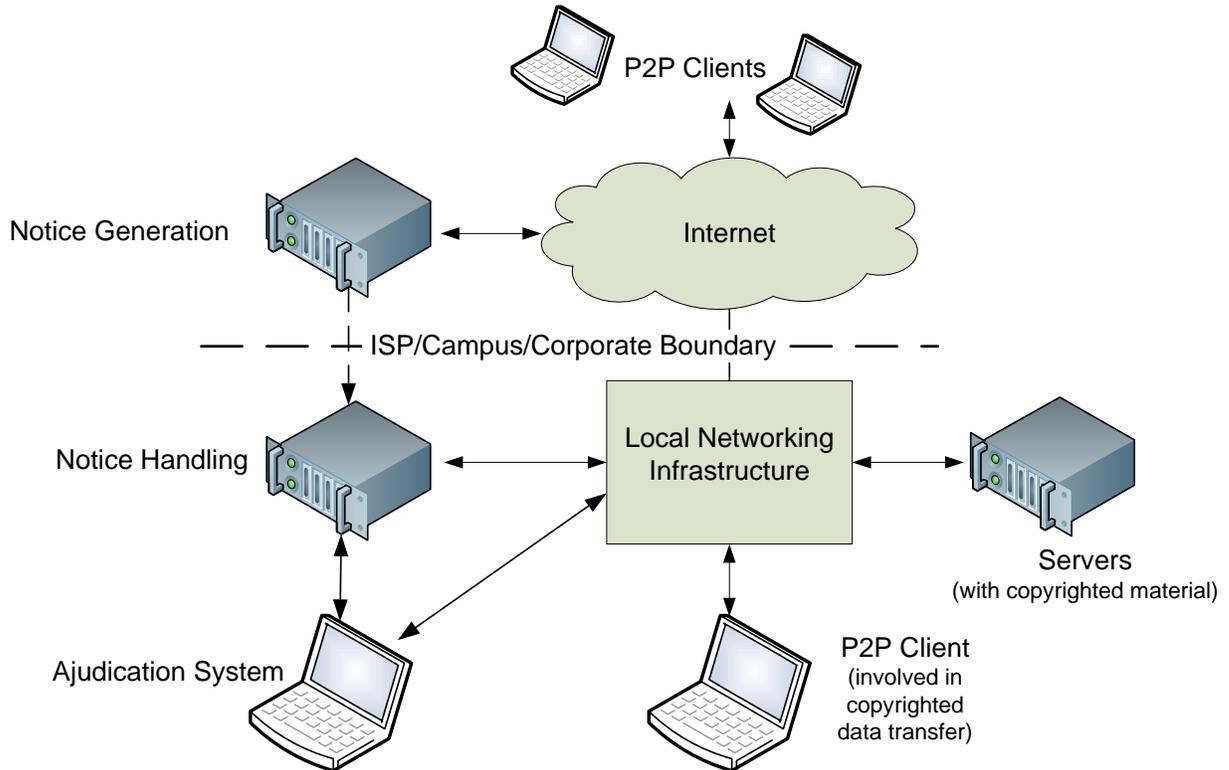
1.2 DMCA

ACNS is designed to support a wide variety of notices. In some cases, the notices may choose to be compliant with the DMCA. As such, this document references the U.S. Digital Millennium Copyright Act (DMCA) notice requirements and is intended to support notices which are compliant with the DMCA. The DMCA only applies to U.S. notices, and requirements vary internationally. It is our intent that ACNS notice formats be broadly applicable, and capable of supporting any local regulations. Please let the authors know of any specific extensions or exceptions are regionally required and we will attempt to incorporate them.

1.3 Acknowledgements

This specification is a collaborative effort between multiple organizations. Initial work on ACNS was done at Universal Music Group, NBC Universal and Disney. ACNS 2.0 was developed with many of the original parties plus MovieLabs, University of California, Los Angeles, MPAA. The authors would like to thank these contributors plus the many that helped review, correct and improve the specification, including (alphabetically), AT&T, BayTSP, Comcast, DTecNet, Easycom, Fox, UC Davis, UC Irvine, Indiana University, North Carolina State, Warner Bros., Paramount, RIAA, SafeNet, Sony, and Yale.

2 MESSAGES

There are the following basic types of messages in ACNS 2.0:

- Notice—description of inappropriate use of copyrighted material

- Acknowledgement—Simple acknowledgement of receipt of the notice along with initial disposition

- Status Update—Update of current notice status. Can be used to communicate a need for human attention or a counter notice. May be in response to Status Query.

- Status Query—Request for information about disposition

This document describes the content of the messages and the encoding, specifically XML schemas for all data objects.

Messages may contain both human-readable text and XML. This document has no opinion on the content of the text.

It is recommended that ACNS XML be included in the body of the message, rather than in an attachment, because some ISPs may strip XML attachments.

The notice can also include a signature to confirm the identity of the sender.

In the US, all DMCA notices must be physically or digitally signed. Given that this is intended for automated handling, the de facto standard is a digital signature. The signature must cover the XML, although it may include the entire message. In all cases, even where the DMCA does not apply, we strongly recommend digital signatures as a best practice.

3   XML

The following sections describes the content of the XML. The actual structure is provided in an XML schema found at http://www.acns.net .

3.1 Notation

Tables are descriptions of the elements but are not intended to conflict with the XML schema. If conflicts exist in structure, the schema takes precedence. If there are semantic ambiguities, please contact info@acns.net.

Some familiarity with XML is assumed. For readability, a table contains the parent element and its direct descendant elements. For example, the Infringement element table has a row for "Infringement" but also has "Case", "Complainant" and other child elements.

Annotations:

"+"   noted for additions for ACNS 2.0. Elements in the ACNS 2.0 Elements section are not so annotated.

"*"   noted as maintained for backward compatibility, but otherwise deprecated.

"-"   represents optional attributes or elements from ACNS 0.7 we recommend deprecating (that is, not using on the receiving side)

Italics indicate an optional element or attribute. All top-level attributes and elements introduced in ACNS 2.0 are optional.

At the top level, ACNS has the Contact complex type and the Infringement element.

3.2 Canonical XML

XML should be canonical form as specified in W3C Canonical XML 1.1, http://www.w3.org/TR/xml-c14n11/.

The descriptions here are somewhat abstract. In the actual XML definition complex types are often used.

3.3 Time and Date

All dates must have time zone. The use of UTC is *strongly* encouraged. For example

```
<mydate>2008-04-29T09:30:10Z</mydate>
```

For backward compatibility, xs:time is used for duration.

4 ACNS 0.7 ELEMENTS (EXPANDED)
4.1 Infringement Element

The root of a notice is an Infringement element.

The infringement element describes the activity being reported. The term "infringement" is used for historical purposes.

Element	Attribute	Definition	Value
Infringement		Information about the infringement[1]	
	schemaVersion	Version of the schema. This changes with each release.	xs:string fixed=versionfixed=version
Case		Unique case information	See Case Element
Complainant		Organization sending the complaint	See Contact Element
Service_Provider		Service provide to whom notice is sent.	See Contact Element
Source		Information that identifies source of infringement	See Source Element
Content		Description of content involved in infringement.	See Content Element
History		Other cases relevant to this case. (optional)	See History Element
Notes		Any notes that may relevant to the infringement. (optional)	xs:string
Type+		Notice Type, ACNS 2.0 . It's absence implies ACNS 0.7.	"DMCA" "INFO" "PRELIT" "INFRINGEMENT" "OTHER"
	Retraction	This message retracts a previously sent notice	xs:boolean
	Comments	Additional information on type of notice, especially OTHER	xs:string
Detection+		Details on detection (optional, ACNS 2.0)	See Detection Element
Verification+		Details on verification process	See Verification Element
InternalTracking+		Internal Tracking information (optional, ACNS 2.0)	See Internal Tracking Element
TextNotice+		Human-readable text from notice (optional, ACNS 2.0)	xs:string
VerifiedData+		Data against which verification process was performed. (optional, ACNS 2.0)	xs:base64Binary

[1] The term "infringement" should be interpreted broadly to mean "infringement", "potential infringement", "alleged infringement", "claimed infringement" or whatever else is meaningful within the context of the message.

Element	Attribute	Definition	Value
Declaration		Any additional declarations, such as applicable laws and authority. (optional, may have multiple instances)	See Declaration Element

There will be only one infringement element for a notice. If multiple files are involved, they will be noted within the Content Element.

Contact information presumes that the primary form of communication is email, so name and email are the only required fields. The assumption is that the whole chain is to be automated, so any responses should be email and not written communication. If implementation incorporates a service interface (e.g., SOAP) then it could be a URL instead of or in addition to an email address.

DMCA requires that Contact be a real person, not an organizational entity. In other regions, some prefer to specify an organization rather than a person.

ACNS 2.0: If ACNS is being used in a non-legal context, the term "infringement" is used for backwards compatibility; it may not mean that the item being reported represents a copyright infringement.

Type, if included, must have one of the following values:

- DMCA—Legal DMCA notice

- INFO—Supplied for information purposes.

- PRELIT—Pre-litigation notice

- INFRINGEMENT—Legal infringement other than DMCA

- OTHER—notice sent for any other purpose

schemaVersion is optional for backwards compatibility; however, it should be included in call cases.

Notes is currently undefined and may contain any information the sender desires.

VerifiedData is a base64Binary representation of the actual bits that were detected and against which the infringement is written. Note that base64Binary can be large. An alternative is to use the VerifiedDataLoc of the Detection Element. Note that with both the VerifiedData and VerifiedDataLoc this is essentially publishing copyrighted material and must be done with appropriate protections in place. Note that because of its size, VerifiedData is a separate element.

4.1.1 Case Element

The Case Element describes the unique case information assigned to the notice.

Element	Attribute	Definition	Value
Case			
ID		Unique ID for notice	xs:string
Ref_URL		URL referencing notice. (optional)	xs:anyURI
Status		(optional)	xs:string

Severity		(optional)	xs:string

The ID must be unique to the notice for the complainant. That is, ID is not a universally unique ID, but rather a unique ID within the complainant organization.

Ref_URL, if included, must be universally unique. There is currently no convention for reference URL containing computer-readable information.

Status and Severity have no strict definition and are included for informational purposes.

Example:

```
<Case>
   <ID>A1234567</ID>
   <Ref_URL>http://www.contentowner.com/trackingid.asp?A1234567</Ref_URL>
   <Status>First Notice, Open</Status>
   <Severity>Normal</Severity>
</Case>
```

4.1.2 Source Element

The Source Element provides technical information identifying the source of the infringement. Although some fields are shown as optional, they may be required in some situations.

Element	Attribute	Definition	Value
Source			
TimeStamp		Time of infringement, typically UTC	xs:dateTime
IP_Address		IP address associated with the infringement. This may be an end system if it has its own routable IP address, or it might be an intermediate such as a NAT server or proxy.	xs:string
Port		If port is necessary to identify the infringement end system, port must be included. (otherwise, optional)	xs:int [0..65535]
Protocol		If protocol is necessary to identify the infringement end system, protocol must be included (otherwise optional)	xs:int[0..254]
DNS_Name		DNS name if applicable to infringement. (optional)	xs:string
MAC_Address		MAC address of infringing system if detected. (optional)	xs:string
IP_Block-		Unused (optional)	xs:string

Type		Type of activity associated with infringement	xs:string
SubType+		(optional, ACNS 2.0)	
	BaseType	General type of detection	"P2P" "SERVER" "LINK" "USENET" "OTHER"
	Protocol	Protocol involved if applicable	"BITTORRENT", "ED2K", "GNUTELLA", "GNUTELLA2" "ARES", "WINNY", "FASTTRACK", "KAD", "HTTP", "FTP" "IRC" "NNTP" "NZB"
	Application	Computer application involved, if known	xs:string
URL_Base		URL associated with infringement, particularly server-based infringements. (optional)	xs:anyURI
UserName		Login information, such as found with P2P client or UGC user. (optional)	xs:string
Login		Logon needed for verification (e.g., ftp site) (optional)	
	Username		xs:string
	Password		xs:string
Number_Files		Number of files identified in notice. This should correspond with the number of Item Elements in the Content Element (optional)	xs:int
Deja_Vu		Information about whether source has been seen before (optional)	xs:string
IsSource		For Usenet only, indicates whether the recipient is a source or mirror. TRUE=source.	xs:boolean

There are a variety of means by which this data will be collected. The exact results depend on those methods. For example, if there is a communication with a P2P client, it may be possible to retrieve the username and password used by that client. If the infringement is based on UGC detected content, the URL_Base may contain a reference to the content. The requirement is that sufficient information be supplied to identify the location of the infringement, whether it is a P2P client, a server, or some other element involved in the infringement.

Although named URL_Base, it is a fully qualified URL. In cases where the infringement comes from a server, IP_Address and optionally port and protocol should be the server.

One type of notice is of type "LINK". In this case, the notice refers to a site that has links to other locations where the file is located. In this case, the notice refers to the linking site, but the actual site of the infringement is noted in the HostingURL element child of the Item element.

Ideally, as much information as possible will be filled into the notice.

TimeStamp must be the TimeStamp from at least one Item instance. This is redundant, but necessary to support legacy applications.

To resolve location, IP_Address and possibly Port and Protocol may be required. When possible, provide IP_Address, Port and Protocol. Port is required to resolve Network Address Translation (NAT). As ports may be reused for different protocols (e.g., TCP and UDP) protocol should be provided as well. Protocol is an IANA defined protocol number as per http://www.iana.org/assignments/protocol-numbers/protocol-numbers.xhtml

Type describes how copyrighted content was being offered or transferred. This may include protocol or other nature of the infringement. ACNS has no restrictions on values for Type. Use the new SubType for details.

SubType is an ACNS 2.0 extension. The BaseType attribute may have the following values:

- "P2P"—file found on P2P network
  - Protocol may be "BITTORRENT", "ED2K", "GNUTELLA", "GNUTELLA2" "ARES", "WINNY", "FASTTRACK", "KAD", "OTHER"
- "SERVER"—file served on sites such as user generated content (UGC) or bitlocker. Note that served data may be downloaded or streamed.
  - Protocol may be "FTP", "HTTP", "OTHER"

The Application attribute is a string describing the application.

We expect that MAC address would only be added by an internal ISP/campus.

Example:
```xml
<Source>
    <TimeStamp>2003-08-30T12:34:53Z</TimeStamp>
    <IP_Address>168.1.1.145</IP_Address>
    <Port>21</Port>
    <DNS_Name>pcp574.nshville.tn.ispbroadband.net</DNS_Name>
    <MAC_Address>00-00-39-B6-00-A4</MAC_Address>
    <IP_Block>?????</IP_Block>
    <Type>FTP</Type>
    <URL_Base>ftp://guest:freepwd@168.1.1.145/media/8Mile/</URL_Base>
    <UserName>guest</UserName>
    <Login Username="guest" Password="freepwd"/>
    <Number_Files>324</Number_Files>
</Source>
```

4.1.3 Content Element

The Content Element identifies the content being infringed upon. It must contain at least one item, and may contain multiple items. All items must have exactly the same information associated with other elements of the notice. For example, all information in the Source Element must apply to all items.

Element	Attribute	Definition	Value
Content			
Item		One or more instances of item elements	See Item Element

4.1.3.1 Item Element

The Item element describes a detected file. There will be one Item element for each detection of a file.

Element	Attribute	Definition	Value
Item			
TimeStamp		Time that element was detected an infringement.	xs:dateTime
AlsoSeen+		Time windows for when seen. May include multiple AlsoSeen elements. One AlsoSeen element may overlap TimeStamp (optional, ACNS 2.0, 0..n entries)	
	Start	Beginning of window	xs:dateTime
	End	End of window (must be greater than or equal to Start)	dateTime
Title		Title of original work (optional)	xs:string
Artist		Artist (optional)	xs:string
FileName		Identification of infringing element. This should be sufficient to identify material in question on the source in question.	xs:string
FileSize		Size of file, generally reported as metadata by the source. (optional)	xs:nonNegativeInteger
URL		URL of infringing content, particularly in a UGC context. (optional)	xs:anyURI
HostingURL+		If notice is for a link, HostingURL contains the URL that is referenced by the link	xs:anyURI

Type		Type of media: Movie, Music, Game, Software, etc. (optional)	xs:string
ExplicitType+		Type of media. Like Type except explicitly enumerated. Note: Document includes books, corporate documents or any other written work. (optional, ACNS 2.0)	xs:string "Movie", "Game", "Software", "Music", "Document", "Image"
Hash		(optional)	xs:string
	Type	Type of hash (i.e., MD5, SHA1, FASTTRACK, etc.)	xs:string
UsenetHeader		This contains information such as newsgroup, date/time string and subject. (optional)	xs:string

Description of all aspects of the infringing offering.

If an item is identified by URL only (e.g., in streaming), then FileName and URL should both the be the URL. . For Usenet-related notices, URL takes the form of a URI of the scheme "news:" as in, "news:xxxxxxxxxxx@xyznews.com"

If the infringement is a LINK type (i.e., referring to a site that is linking to a copyrighted file at a different location) HostingURI is the location of the actual file location.

TimeStamp may be any time during which the element was offered.

AlsoSeen is a new optional field for ACNS 2.0. AlsoSeen specifies time windows when content was detected. This may aid in mapping notices to actual users if ISP/campus logs are incomplete or ambiguous. Recommended practice is as follows: Always include at least one AlsoSeen element whose window spans the time first detection through a loss of detection with a extremely high confidence of continual connection. This AlsoSeen element overlaps TimeStamp. An AlsoSeen element overlapping TimeStamp can be used for disambiguating IP addresses in the case of dynamic IP address/port changes around TimeStamp. AlsoSeen elements not overlapping TimeStamp are informational.

FileName when used with IP address, and optionally port and protocol, is the definitive identification of the infringement.

Other elements are metadata that provide additional information about the infringement.

```
<Item>
   <TimeStamp>2003-08-30T12:34:53Z</TimeStamp>
   <Title>8 Mile</Title>
   <FileName>8Mile.mpg</FileName>
   <FileSize>702453789</FileSize>
   <URL>ftp://guest:freepwd@168.1.1.145/media/8Mile/8mile.mpg</URL>
   <Type>Movie</Type>
   <Hash Type="SHA1">EKR94KF985873KD930ER4KD94</Hash>
</Item>

<Item>
```

```
    <TimeStamp>2003-08-30T12:34:53Z</TimeStamp>
    <Title>Lose Yourself</Title>
    <Artist>Eminem</Artist>
    <FileName>eminem_loseyourself.mp3</FileName>
    <FileSize>4235654</FileSize>
    <URL>ftp://guest:freepwd@168.1.1.145/media/8Mile/eminem_loseyourself.mp3</
URL>
    <Type>SoundRecording</Type>
    <Hash Type="SHA1">B5A94KF93673KD930D21DFD94</Hash>
</Item>
```

The following adds 2.0 features:

```
<Item>
    <TimeStamp>2008-08-30T12:34:53Z</TimeStamp>
    <AlsoSeen Start="2008-08-30T12:34:53Z" End="2008-08-30T14:32:00Z"></AlsoSeen>
    <AlsoSeen Start="2008-08-30T18:04:22Z" End="2008-08-30T20:45:23Z"></AlsoSeen>
    <Title>8 Mile</Title>
    <FileName>8_Mile[2002]DvDrip[Eng].4473459.TPB.torrent</FileName>
    <FileSize>734013472</FileSize>
    <Type>Movie</Type>
    <ExplicitType>Movie</ExplicitType>
    <Hash Type="SHA1">6AF9F5BF5493B6BB72F15F77C2E541D606328AEA</Hash>
</Item>
```

4.1.4 History Element

History is intended to provide history on the case. If, for example, it is known that multiple notices have been sent, these notices may be maintained within the xs:string portion of the history element.

In cases involving identification through IP addresses (e.g., P2P versus servers with DNS names), there is generally no reliable means of tracking history. In these cases, the History element should not be included.

Element	Attribute	Definition	Value
History			
Notice			
	ID	ID from Case Element of historical notice	xs:anySimpleType
	TimeStamp	TimeStamp from Source Element of historical notice	xs:dateTime

The ID is the ID from the Case Element of the previous notice and the TimeStamp is the timestamp of the notice. The assumption is that ID is sufficient to retrieve previous notices. The ID in the Case element is xs:string but for backwards compatibility, this ID attribute cannot be changed. However, ID should be used as if it were xs:string.

In ACNS 0.7, TimeStamp was anySimpleType. As the time in Source is dateTime, it made sense to make this correction. As there is no indication of current use of the History Element, this should not be impactful.

4.1.5 Declaration Element

The Declaration element allows the sender to include additional declarations, such as citing relevant laws or regulations, and definition authority. This element does not currently have defined values as applicability varies by region.

The Type element indicates what type of declaration is included. Examples include, "Proof of Authority" and "Act Violated". The vocabulary is uncontrolled, so this should include something meaningful to both sender and receiver.

Element	Attribute	Definition	Value
Declaration			
Type		Type of declaration.	xs:string
Body		The body of the declaration. This is text.	xs:string
LinkToBody		A URL where the body of the declaration may be found.	xs:anyURI

4.2 Contact Complex Type

The Contact Element is used in a few different capacities. In the scheme it is defined as a complex type.

Element	Attribute	Definition	Value
Contact			
Entity		Name of contact organization	xs:string
Contact		Name of contact (optional)	xs:string
Address		Address of contact (optional)	xs:string
Phone		Phone of contact (optional)	xs:string
Email		Contact email	xs:string
url+		Contact URL (optional, ACNS 2.0)	xs:anyURI

Example:

```
<Entity>Content Owner Inc.</Entity>
<Contact>John Doe</Contact>
<Address>100 Anywhere Street, Anywhere, CA 90000</Address>
```

```
<Phone>555-555-1212</Phone>
<Email>antipiracy@contentowner.com</Email>
```

5 ACNS 2.0 ELEMENTS

5.1 Identification Elements

5.1.1 Detection Element

The Detection Element is included to capture details on the detection method. This may be necessary for certain policies.

Element	Attribute	Definition	Value
Detection			
Asset		What content was matched	See Asset Element
ContentMatched			
	Audio	Was audio matched	xs:boolean
	Video	Was video matched	xs:boolean
	Text	Was text matched (applies to written works)	xs:boolean
	Image	Was image matched (applies to photos, books, etc.)	xs:boolean
	MatchThreshold	The level of quality or certainty that was achieved by the underlying recognition system. If any attribute is missing, it will be assumed that it is not known.	xs:int [0..100]
	Fingerprint	Was automated fingerprint matching used	xs:boolean
	Human	Was there human observation in match	xs:boolean
HashMatched		Was file hash matched	xs:boolean
MetadataMatched		Was metadata detected	xs:boolean
WatermarkMatched		If supported, this allows for detection of watermarks.	
	type	The watermark that was detected	xs:string
	payload	Value associated from payload (if applicable). Presented as string. If binary, use hexadecimal	xs:string
VerificationID		Text description of the verification system, version or other identifying information.	xs:string
VerifiedDataLoc		Data against which verification process was performed. (optional)	xs:anyURI

MatchThreshold is a measure of quality of the match. Not all recognition system will support this parameter. If a recognition system does not have this information available, or is completely confident in its match/no match decisions, then it should provide '100' for anything it returns as a reasonable match. Virtually any interpretation of this attribute is acceptable. For example, one vendor stated they view it as match likelihood.

At least one of HashMatched, MetadataMatched or Content Matched must be included.

Watermark type is not currently enumerated although it is in consideration for future versions. Examples of this field might be, "DCIforensic", "AACStheatrical" and "AACSconsumer".

VerifiedDataLoc provides a location where the data identified as infringing is stored. See VerifiedData under the Infringement element for additional notes.

Example:
```
<Detection>
    <Asset>
        <OriginalAssetName>8 Mile</OriginalAssetName>
        <OriginalAssetID type="ISAN">0000-0000-F23C-0000-J-0000-0000-H</OriginalAssetID>
    </Asset>
    <ContentMatched Fingerprint="true" Video="true" Audio="true"
MatchThreshold="100" Human="true"/>
    <HashMatched>true</HashMatched>
    <MetadataMatched>true</MetadataMatched>
    <VerificationID>String</VerificationID>
</Detection>
```

5.1.2 Asset Element

Element	Attribute	Definition	Value
Asset			
OriginalAssetName		Convenience field for human readability	xs:string
OriginalAssetID		A way of uniquely identifying a piece of content. See 'Required External Data' section.	xs:string Type-specific – see "ID Types and ID Values" table
	type	Type of the ID.	xs:string See ID Types and ID Values table

5.1.3 ID Types and Values

The following is a partial list of identifiers.

ID type	ID value
ISAN	An <ISAN> element, as specified in ISO15706-2 Annex D.
UUID	A UUID in the form 8-4-4-4-12
URI	A URI; this allows compatibility with TVAnytime and MPEG-21
GRid	A Global Release identifier for a music video; exactly 18 alphanumeric characters
ISRC	International Standard Recording Code for music videos; exactly 12 alphanumeric characters
Coral	A Coral <Resource> element, as specified in Coral Core Architecture Specification, Version 4.0, §2.5.3
	An ISBN, ISO 2108, http://www.isbn-international.org
ISSN	Serials. ISO 3297:1998.
ISTC	Textual works. ISO 21047
ISMN	Printed music, ISO 10957, http://ismn-international.org/
ISRC	Master recordings, ISO 3901, http://www.ifpi.org/content/section_resources/isrc.html
ISWC	Musical Works, http://www.cisac.org
TVG	TV Guide
AMG	AMG
IMDB	IMDB
MUZE	Muze
TRIB	Tribune
Baseline	Baseline Research ID, www.baselineresearch.com
EIDR	Entertainment ID Registry. http://www.eidr.org
DOI	Digital Object Identifier http://www.doi.org
SMPTE-UMID	SMPTE-UMID as per SMPTE ST 330-2004
Ad-ID	Ad-ID as per format defined at http://www.ad-id.org/help/structure.cfm

GTIN	Global Trade Item Number. http://www.gtin.info/
UPC	Universal Product Code (UPC). UPC-E should be converted to UPC-A form.
CRid	CRid (Content Reference Identifier) as per RFC 4078 http://tools.ietf.org/html/rfc4078
cIDf	Content ID Forum. cIDf Specification 2.0, Rev 1.1., 4/1/2007.
OwnerUnique	See below
Other	See below

Ref: ISO TC 46 SC 9 Information and Documentation - Identification and Description http://www.lac-bac.gc.ca/iso/tc46sc9/

An owner OwnerUnique identifier is a fully qualified domain name (FQDN) of the organization, plus path. For example, it might be mycompany.com/contentid. The owner should choose FQDN to ensure it will be unique.

Other may be used for either a standard or proprietary naming scheme. If the naming scheme is standard, concatenate the naming scheme with the ID. Where a URI scheme is already established, it is not necessary to repeat it (e.g., "CRid:"). For nonstandard identifiers, ensure that ID will be unique. Recommended is concatenating a unique domain with the ID, for example, "www.movilabs.com:ContentID:IDVALUE12345".

5.1.4 Verification Element

Defines the level of verification associated with the process used for detection. For example, in P2P network, this element would define the process used to determine that the peer was involved in file sharing.

It is assumed that a verification system uses a numerical rating system. Levels are only meaningful within that system. That is, VerificationLevel within one system (i.e., one type) cannot be compared to VerificationLevel of another system. If threshold levels for VerificationLevel are to be set for certain actions, they need to be established on a Type by Type basis.

Types are not defined in this document. When defined, they should be available to any potential recipients of ACNS notices. The rating system should name the value for the Type element (in a non-colliding manner) as well as the meaning of each rating level. Later versions of this document may include or reference validation rating systems.

The element Notes is provided to allow the inclusion of any additional data regarding the verification level.

Element	Attribute	Definition	Value
Verification			
VerificationLevel		Numerical value representing level	xs:int
	Type	System used for rating verification.	xs:string

Element	Attribute	Definition	Value
Notes		Any additional comments about verification	xs:string

5.2 Notice Acknowledgement

The notice acknowledgement is sent in response to a notice. It indicates whether or not the notice has been processed.

Element	Attribute	Definition	Value
NoticeAck			
	schemaVersion	Version of the schema. This changes with each release.	xs:string fixed=versionfixed=version
	Accepted	Was notice accepted (true) or rejected (false)	xs:boolean
	RejectReason	Why was notice rejected (applies if rejected).	"UNKNOWN_RECIPIENT" "IP_OUT_OF_RANGE" "MULTIPLE", "TEXT_XML_MISMATCH", "OTHER"
	TimeStamp	Time of acknowledgement	xs:dateTime
	Sequence	Monotonically increasing sequence number, starting with 0. If multiple acknowledgements are sent on one case, the sequence number must increase by one. No sequence is assumed to be "0"	xs:int
Case		Case information from original notice	See Case Element
Complainant		Organization sending the complaint from original notice	See Contact Element
Service_Provider		Service provide to whom notice is sent.	See Contact Element
Addl_Contact		Additional Contact info, especially if Service_Provider is not correct.	See Contact Element
Notes		Any additional information	xs:string

Reasons for rejecting are
- "UNKNOWN_RECIPIENT" – could not match information to an individual. IP address/port/protocol not in use at given time
- "IP_OUT_OF_RANGE" – IP address is not within the range of the organization to whom the notice was sent.

- "MULTIPLE" – More than one notice sent to the same individual for the same infringement.
- "TEXT_XML_MISMATCH" – The text portion of the notice and the XML contain information that cannot be resolved. For example, if the time ranges, title or IP address/port/protocol are different, the report is ambiguous and this reason would apply
- "OTHER" – Any other reason. Reason should be explained in Notes.

```xml
<NoticeAck Accepted="true" Sequence="0" TimeStamp="2008-08-30T12:41:00Z">
   <Case>
       <ID>A1234567</ID>
       <Ref_URL>http://www.contentowner.com/trackingid.asp?A1234567</Ref_URL>
       <Status> Open</Status>
       <Severity>Normal</Severity>
   </Case>
   <Complainant>
       <Entity>ScannerVendor, Inc.</Entity>
       <Contact>Jonathan Doe</Contact>
       <Address>100 Anywhere Street, Anywhere, CA 90000, USA</Address>
       <Phone>650-555-5555</Phone>
       <Email>notice@scannervendor.com</Email>
       <ContactURL>https://www.scannervendor.com/complaints.php</ContactURL>
   </Complainant>
   <Service_Provider>
       <Entity>GreatISP</Entity>
       <Contact>Jack Doah</Contact>
       <Address>1234 My Street, Everwhere, NY, 10001, USA</Address>
       <Phone>212-555-5555</Phone>
       <Email>abuse@greatisp.net</Email>
       <ContactURL>http://www.greatisp.net/gotanotice</ContactURL>
   </Service_Provider>
   <Addl_Contact>
       <Contact>Julie Doe, Abuse Coordinator</Contact>
       <Phone>310-555-5556</Phone>
       <Email>julie_doe@isp.net</Email>
   </Addl_Contact>
   <Notes>Good catch, thanks for the info.</Notes>
</NoticeAck>
```

5.3 Status Query

These elements are used to request information on a case and return information on that case.

5.3.1 Status Request Element

This element is use to request the status of a particular case.

Element	Attribute	Definition	Value
StatusRequest			
	schemaVersion	Version of the schema. This	xs:string

		changes with each release.	fixed=versionfixed=version
	TimeStamp	Time of request	xs:dateTime
Case		Case information from original notice. (1..n)	See Case Element (choice with StartDateTime, EndDateTime)
StartDateTime		Beginning date/time for query time period (inclusive)	xs:dateTime (choice with Case)
EndDateTime		End date/time for query time period (noninclusive)	xs:dateTime (choice with Case)
Complainant		Organization sending the complaint from original notice	See Contact Element
Service_Provider		Service provide to whom notice is sent.	See Contact Element

The scope of the query is determined by either cases or a time period. Either one or more Case elements or single instance of both StartDateTime and EndDateTime may be included, but not both. If one or more Case elements are included, the scope of the query is the referenced cases. If StartDateTime and EndDateTime are specified, then the query is for all cases falling within that range.

The following example queries one case:

```xml
<StatusRequest TimeStamp="2008-12-20T12:00:00.0Z">
   <Case>
   <ID>A1234567</ID>
      <Ref_URL>http://www.contentowner.com/trackingid.asp?A1234567</Ref_URL>
      <Status> Open</Status>
      <Severity>Normal</Severity>
   </Case>
   <Complainant>
      <Entity>ScannerVendor, Inc.</Entity>
      <Contact>Jonathan Doe</Contact>
      <Address>100 Anywhere Street, Anywhere, CA 90000, USA</Address>
      <Phone>650-555-5555</Phone>
      <Email>notice@scannervendor.com</Email>
      <ContactURL>https://www.scannervendor.com/complaints.php</ContactURL>
   </Complainant>
   <Service_Provider>
      <Entity>GreatISP</Entity>
      <Contact>Jack Doah</Contact>
      <Address>1234 My Street, Everwhere, NY, 10001, USA</Address>
      <Phone>212-555-5555</Phone>
      <Email>abuse@greatisp.net</Email>
      <ContactURL>http://www.greatisp.net/gotanotice</ContactURL>
   </Service_Provider>
</StatusRequest>
```

The following example queries a time range:

```xml
<StatusRequest TimeStamp="2008-12-20T12:00:00.0Z">
    <StartDateTime>2008-12-20T12:00:00.0Z </StartDateTime>
    <EndDateTime>2008-12-21T12:00:00.0Z</EndDateTime>
    <Complainant>
        <Entity>ScannerVendor, Inc.</Entity>
        <Contact>Jonathan Doe</Contact>
        <Address>100 Anywhere Street, Anywhere, CA 90000, USA</Address>
        <Phone>650-555-5555</Phone>
        <Email>notice@scannervendor.com</Email>
        <ContactURL>https://www.scannervendor.com/complaints.php</ContactURL>
    </Complainant>
    <Service_Provider>
        <Entity>GreatISP</Entity>
        <Contact>Jack Doah</Contact>
        <Address>1234 My Street, Everwhere, NY, 10001, USA</Address>
        <Phone>212-555-5555</Phone>
        <Email>abuse@greatisp.net</Email>
        <ContactURL>http://www.greatisp.net/gotanotice</ContactURL>
    </Service_Provider>
</StatusRequest>
```

5.4 Status Update

5.4.1 Status Update Element (Deprecated)

An organization responds to a Status Request with a Status Update. Or, an organization may send a Status Update unsolicited. Information from the request is mirrored in the response to make the response more self-contained and also to ensure better matching with original request.

NOTE: `NoticeStatus` is preferred to `Status Update`.

Element	Attribute	Definition	Value
StatusUpdate			
	TimeStamp	Time of status update	xs:dateTime
	ReqTime	Time of request from Status Request (required if StatusUpdate is sent in response to a StatusRequest)	xs:dateTime
Case		Case information	See Case Element
Complainant		Complainant	See Contact Element
Service_Provider		Service Provider	See Contact Element
HumanInt		If this field exists, human intervention is requested. Contact is person who should be contacted.	See Contact Element

Disposition		Disposition of case	
	Status	Enumerated status of case	"OPEN", "CLOSED", "REJECTED" "COUNTERNOTICE"
	InfoStatus	Results	"INFO", "ACTION", "TERM", "NOACTION", "NONEPOS"
	Level	Graduated Response Level (starting with 1)	xs:int
DispositionUsenet		Disposition of the notice in the context of Usenet (0..n)	See UsenetDisposition Element
CounterNotice		If a counternotice has been sent, this element contains the contents of that counternotice (optional)	See CounterNotice Element
NoticeAck		Acknowlegement(s) sent with notice. Required if Disposition Status is "REJECTED"	See NoticeAck
Content		List of Items for which this update applies. It is most applicable when a counternotice refers to a subset of the content in the notice.	See Content Element.
Notes		Any additional information on case (optional)	xs:string

The Disposition Element provides information about how the case was handled. It may be

- OPEN—currently being processed
- CLOSED—no further action being taken
- REJECTED—notice could not be processed
- COUNTERNOTICE—A Counter Notice has been filed.

Beyond this basic status additional information can be provided in InfoStatus, Level and Notes.

InfoStatus, an optional attribute, may be

- INFO—information was provided to the subscriber (educational)
- ACTION—A punitive action short of termination was taken
- TERM—subscriber's account was terminated
- NOACTION—No action has been taken
- NONEPOS—No actions possible. For example, if a subscriber terminated their subscription.

Level, an optional attribute, indicates the number of notices received by the subscriber or the level of response taken. In a 3-strike system, level would be "1", "2", or "3".

HumanInt is reserved for extraordinary circumstances, particularly those that could not be handled automatically. We anticipate that abuse of HumanInt will result in delays in processing.

```
<StatusUpdate ReqTime="2008-12-20T12:00:00.0Z" TimeStamp="2008-12-
20T12:30:00.0Z">
    <Case>
        <ID>A1234567</ID>
        <Ref_URL>http://www.contentowner.com/trackingid.asp?A1234567</Ref_URL>
        <Status> Open</Status>
        <Severity>Normal</Severity>
    </Case>
    <Complainant>
        <Entity>ScannerVendor, Inc.</Entity>
        <Contact>Jonathan Doe</Contact>
        <Address>100 Anywhere Street, Anywhere, CA 90000, USA</Address>
        <Phone>650-555-5555</Phone>
        <Email>notice@scannervendor.com</Email>
        <ContactURL>https://www.scannervendor.com/complaints.php</ContactURL>
    </Complainant>
    <Service_Provider>
        <Entity>GreatISP</Entity>
        <Contact>Jack Doah</Contact>
        <Address>1234 My Street, Everwhere, NY, 10001, USA</Address>
        <Phone>212-555-5555</Phone>
        <Email>abuse@greatisp.net</Email>
        <ContactURL>http://www.greatisp.net/gotanotice</ContactURL>
    </Service_Provider>
    <Disposition Status="CLOSED" infoStatus="ACTION" Level="2"/>
</StatusUpdate>
```

5.5 NoticeStatus (replaces Status Update)

NoticeStatus is a newer version of Status Update. This message is preferred.

An organization responds to a Status Request with a NoticeStatus. Or, an organization may send a NoticeStatus unsolicited. NoticeStatus may also be sent unsolicited. Information from the request is mirrored in the response to make the response more self-contained and also to ensure better matching with original request.

NoticeStatus has the ability to return multiple CaseStatus elements, allowing a full response to StatusRequest messages that cover multiple cases.

5.5.1 NoticeStatus Element

NoticeStatus is a container for multiple CaseStatus elements to allow either a single response or multiple responses to StatusRequest.

Element	Attribute	Definition	Value
NoticeStatus			
	schemaVersion	Version of the schema. This changes with each release.	xs:string fixed=versionfixed=version
CaseStatus		Case-specific status response. (1..n)	see CaseStatus element
StartDateTime		If time range was requested in StatusRequest, this is the StartDateTime from the request	xs:dateTime
EndDateTime		If time range was requested in StatusRequest, this is the EndDateTime from the request	xs:dateTime

`StartDateTime` and `EndDateTime` are optional. If either is present, they both must be present.

5.5.2 CaseStatus Element

The `NoticeStatus` elements is of complex type `type_NoticeStatus`.

Element	Attribute	Definition	Value
CaseStatus			
	CaseID	ID element from the Case element of the original notice. This is used to match NoticeStatus with the original notice.	xs:string
	TimeStamp	Time NoticeStatus element was generated.	xs:dateTime
	ReqTime	If NoticeStatus is generated in response to a Notice Request, this is the time of the ReqTime. In particular, it is the value provided in the timestamp attribute of the StatusRequest element	xs:dateTime
Disposition		This disposition of this notice.	See type_StatusDisposition
GRStatus		Graduated Response-specific status. Either this or UsenetStatus may be included (choice)	See type_GRStatus
UsenetStatus		Usenet-specific status. Either this or GRStatus may be included (choice)	see type_UsenetDisposition

Element	Attribute	Definition	Value
Source		Information about the source of the infringement (optional)	see type_StatusSource
HumanInt		Call-back contact information for human intervention. Only include if human intervention is required. (optional)	see Contact element
CounterNotice		Subscriber-generated counternotice information if applicable to this notice. (optional)	see type_CounterNotice

5.5.2.1 type_StatusDisposition

Element	Attribute	Definition	Value
type_StatusDisposition			
Type		Enumerated status of case	"OPEN", "CLOSED", "REJECTED" "COUNTERNOTICE"
Reason		Additional information about Type.	xs:string, see below
FirstProcessedDate		The date and time when the notice was first processed. Note that additional processing beyond simply receiving the notice is required.	xs:dateTime
LastModifiedDate		The time of the most recent action on this notice. It may be equal to FirstProcessedDate if no additional processing is done.	xs:dateTime

The Disposition Element provides information about how the case was handled. It may be as follows:

- OPEN—currently being processed
- CLOSED—no further action being taken
- REJECTED—notice could not be processed
- COUNTERNOTICE—A Counter Notice has been filed.

The following Reason values may be used

- when Type = "OPEN"
    - MAPPED – Notice has been mapped to another notice, typically in the context of graduated response mapping to infringement or incident (see below), but no action was taken.
    - TOOK_ACTION – Action has been taken. See GRStatus or UsenetStatus elements for more detail. MAPPED is implied by ACTION.
- When Type = "REJECTED"
    - DUPLICATE_NOTICE – Notice identically replicates another notice

- INVALID_IP – IP is not within range of IP addresses processed by recipient
- When type = "CLOSED"
    - TOOK_ACTION – (defined as above)
    - UNABLE_TO_RESOLVE_USER – Notice is valid, but User cannot be identified
    - USER_GONE – User is no longer a subscriber. No action possible.

Other values may be used as appropriate.

5.5.2.2 type_Status_Source

Element	Attribute	Definition	Value
type_StatusSource			
Complainant		Complainant	See Contact Element
Service_Provider		Service Provider	See Contact Element
Content		List of Items for which this update applies. It is most applicable when a counternotice refers to a subset of the content in the notice.	See Content Element.

5.5.3 Graduated Response Types

Graduated Response is the process of handling multiple notices and taking action based on the content, quantity and timing of notices. This section applies when ACNS is used in conjunction with Graduated Response.

5.5.3.1 Process and Definitions

ACNS assumes a certain message flow for the purposes of defining status and terminology. The process described below is independent of the specific technology or process that an ISP may follow to process notices, and is designed to be applicable to all ISP environments.

The following terminology is used:

- *Infringements* – these are unique notices that will be processed further. Some notices do not make it to this stage as they are considered by the ISP to be duplicates of other notices.

- *Incidents* – these are infringements that will be processed further. The Notice sender does not know if multiple infringements correspond with a single subscriber. The ISP may group multiple Infringements corresponding with a particular subscriber over a specified time window into one Incident. For example, all infringements by a single user across a 24 hr time window may be mapped into a single Incident.

ISPs may further group Incidents into actionable sets, and may only take actions/apply sanctions on a subset of the Incidents. This is not explicitly modeled as a separate state of the Notice, but is communicated through the action taken by the ISP for that Incident.

In summary, a Notice may be rejected or become an infringement. One or more infringements will become an incident. Actions may be taken against incidents.

The process diagram illustrates the flow of infringements and incidents. It also indicates the Display Types associated with specific conditions.
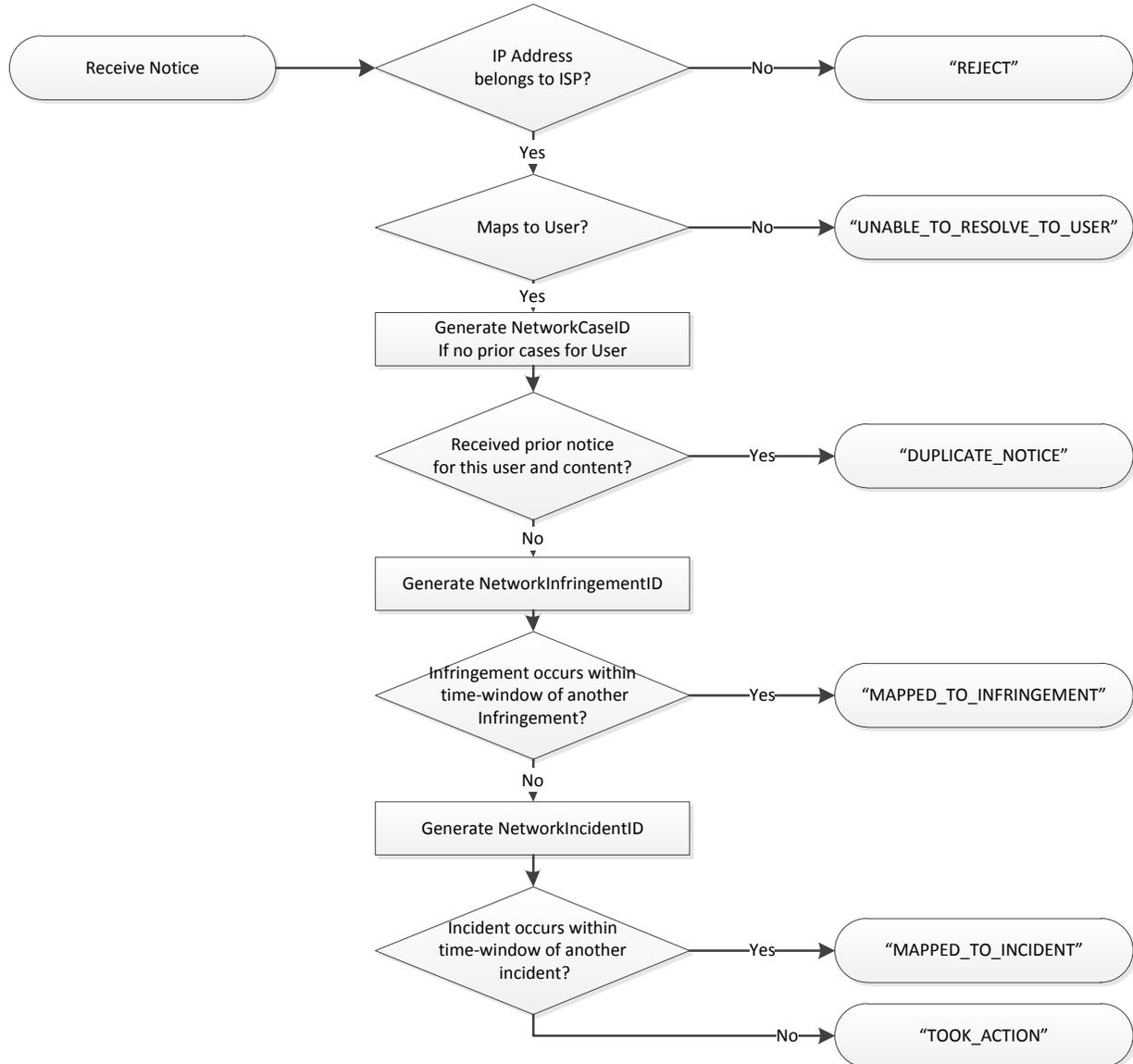
5.5.3.2 Graduated Resonse Status: type_GRStatus

This elements is used when referring to IPSs as part of a graduated response program.

Element	Attribute	Definition	Value

type_GRStatus			
NetworkCaseiID		ISP generated Internal Case Identifier corresponding with the Case number on the Notice (optional)	
NetworkInfringementID		ISP generated Internal InfringementID associated with this notice; as described in the process diagram in section 5.5.1 (optional)	xs:string
NetworkIncidentID		ISP generated Internal IncidentID associated with this notice; as described in the process diagram in section 5.5.1 (optional)	xs:string
ActionTaken		Action taken on this notice. If more than one action was taken, multiplie instances may occur. (zero or more instances)	see ActionTaken element
UserData		Statistics regarding the involved subscriber. (optional)	see UserData element

5.5.3.3 ActionTaken element

This element describes the action taken in response to notice reception. There should be one instance of this element for each action taken. For example, if email was sent three times, there should be three instances of this element, unique in the time. If multiple actions were taken together, separate `ActionTaken` elements with the same `Time` should be included.

Element	Attribute	Definition	Value
ActionTaken			
Type		Identification action taken.	xs:string (see below)
Time		Time action was taken	xs:dateTime
AdditionalData		Any additional description (optional)	xs:string

Type should be one of the following:
- `SENT_NOTICE_EMAIL` – The subscriber has been informed via email
- `SENT_NOTICE_MAIL` – The subscriber has been informed via conventional mail
- `SENT_NOTICE_BROWSER_ACKW` – The subscriber has been informed via browser redirect. It is assumed the subscriber acknowledged the notice to disable the redirect.
- `THROTTLED_BANDWIDTH` – The subscriber's bandwidth has been modified
- `EDUCATION` – The subscriber was provided with educational information

- SUSPENSION – The subscriber's service was either in part (e.g., selected protocols) or whole suspended.
- TERMINATION – The subscriber's account has been terminated.
- OTHER – Some other action was taken

Additional values are permitted with coordinator between sender and recipient.

5.5.3.4 UserData element

Element	Attribute	Definition	Value
UserData			
AnonUserIdentifier		An ISP provided value that represents an anonymized identifier for a subscriber. (optional)	xs:string
TotalCaseCount		The number of cases to date generated around a subscriber. (optional)	xs:int
TotalInfringementCount		The total number of infringements associated with a subscriber. (optional)	xs:int
TotlaIncidentType		The total number of incidents associated with a subscriber. (optional)	see ActionTaken element

These elements are assumed to be related to the subscriber associated with the case, even if no AnonUserIdentifier is provided. If no elements are included, this element should not be included in the parent.

5.5.4 UsenetDisposition Element

This element provides detailed information on the processing of a notice relating to Usenet.

Element	Attribute	Definition	Value
UsenetDisposition			
Article		Article in question. Notice may have more than one article. This will have the news: URI.	xs:anyURI
Removed		Article was removed? TRUE=removed.	xs:boolean

CancelMsg		Cancel Message was sent, TRUE=yes. (optional)	xs:boolean

Usenet sources are assumed to remove and send cancel message. Usenet mirrors are assumed to remove article, but not send cancel message. If cancel message was sent, CancelMsg should be TRUE. CancelMsg is required for sources and should not be included for mirrors.

5.5.5 Counter Notice Element

ACNS 2.0 includes provisions for a subscriber to file a counter-notice, such as provided for in DMCA and elsewhere. Some information for a formal notice is included in the parent element.

Element	Attribute	Definition	Value
CounterNotice			
	TimeStamp	Time of notice generation	xs:dateTime
	DMCA	This a DMCA counternotice? True means yes.	xs:boolean
Service_Provider		Service provider to whom notice is sent.	See Contact Element
Addl_Contact		Additional Contact info, especially if Service_Provider is not correct.	See Contact Element
Subscriber		Person filing counternotice	See Contact Element
CounterNoticeContent		Either full text of counternotice, or scanned image of counter notice	See CounternoticeContent Element
Notes		Any additional information	xs:string

Example:

```xml
<CounterNotice DMCA="false" TimeStamp="2008-12-20T12:30:00.0Z">
   <Service_Provider>
      <Entity>GreatISP</Entity>
      <Contact>Jack Doah</Contact>
      <Address>1234 My Street, Everwhere, NY, 10001, USA</Address>
      <Phone>212-555-5555</Phone>
      <Email>abuse@greatisp.net</Email>
      <ContactURL>http://www.greatisp.net/gotanotice</ContactURL>
   </Service_Provider>
   <Subscriber>
      <Contact>Joe Pirate</Contact>
         <Address>100 My Street, Anywhere, CA 90000</Address>
         <Phone>310-555-5555</Phone>
         <Email>joe_pirate@isp.net</Email>
   </Subscriber>
```

```
    <CounternoticeContent RejectReason="OTHER"  OtherReason="I like stealing"
PropertlySigned="true" >
        <NoticeText>
<![CDATA[
This counternotice does not contain a valid justification, although it is
formed correctly.  I just like to steal file and share them.

Sincerely,
Joe Pirate]]>
        </NoticeText>
    </CounternoticeContent>
    <Notes>
<![CDATA[This counternotice will not affect our process for terminating
subscription on the third strike. --Jack</Notes>]]>
    </Notes>
</CounterNotice>
```

5.5.6 Counter Notice Content Element

A Digital Counternotice contains the content of a counternotice sent by a subscriber electronically or generated electronically through a user interface.

Element	Attribute	Definition	Value
CounternoticeContent			
	RejectReason	Reason for Counternotice	"IOWN", "FAIRUSEFREESPEECH", "MISIDENTIFIED", "OTHER"
	OtherReason	If RejectReason is "OTHER" this attribute may contain an explanation	xs:string
	ProperlySigned	Was notice properly signed? True means yes.	xs:boolean
	Consent	Does subscriber consent to applicable jurisdiction? True means yes.	xs:boolean
	Statement	Statement that material was removed by mistake or misidentification	xs:string
NoticeText		Full text of counternotice. Required unless all optional attributes above are completes, with the exception of OtherReason if RejectReason is not "OTHER"	xs:string
NoticeImage		Scanned image of a paper counternotice	MIME Image (see below)
Notes		Any additional information	xs:string

For easier processing, some reasons are accepted as enumerated value in the form of the optional RejectReason:

- IOWN – person asserts they own the content in question

- FAIRUSEFREESPEECH – person asserts the content was correctly recognized, but has been modified in such a way as to constitute fair use or free speech (or equivalent in non-US law).

MISIDENTIFIED – person asserts that the content described in the notice is not the content they possess

At least one of attributes, text or image must be included. As long as one exists, any combination of the others are acceptable.

NoticeImage is MIME encoded in accordance with: Describing Media Content of Binary Data in XML, W3C Working Group Note 4 May 2005 found here: http://www.w3.org/TR/xml-media-types/ . Note that this includes the xmime: namespace. Although the schema does not restrict the MIME type, common types such as application/pdf, image/jpeg, image/gif and image/png should be used.

6 INTERNAL TRACKING

Provisions were requested for handling notices within a campus (this was not requested by ISPs). This section offers standard interfaces for use in developing internal tracking systems.

6.1 Internal Tracking Elements

These elements are used for tracking the notice after delivery.

In the data, the term ISP is used to refer to any entity tracking the notice. This might be an ISP, college/university, corporation, government institution or any other entity that manages a network.

The InternalTracking Element tracks the disposition of the notice. For backwards compatibility, this supplements but does not replace the Status Element within the Case Element.

Element	Attribute	Definition	Value
InternalTracking			
	CurrentSequence	Sequence number that corresponds with current disposition	xs:int
	InternalCaseNumber	Unique identifier for the case within the organization (i.e., case number)	xs:string
PrimarySubject		Person associated with Infringement Element(s)	See Subject Element
Disposition		Zero or more dispositions	See Disposition Element
Mapping		How external notice was mapped to people within organization	See Mapping Element

```xml
<InternalTracking InternalCaseNumber="ISP1234567" CurrentSequence="1">
   <PrimarySubject>
      <SubjectContact>
         <Contact>Joe Pirate</Contact>
         <Address>100 My Street, Anywhere, CA 90000</Address>
         <Phone>310-555-5555</Phone>
         <Email>joe_pirate@isp.net</Email>
      </SubjectContact>
      <SubjectID type="SubscriberNum">Sub123549991</SubjectID>
   </PrimarySubject>
   <Disposition Start="2008-12-17T09:30:47.0Z" End="2008-12-17T09:30:47.0Z"
          Sequence="0">
      <InternalStatus>2nd Notice</InternalStatus>
      <Comments>Having difficulty reaching subscriber</Comments>
      <Contact>
         <Contact>Julie Doe, Abuse Coordinator</Contact>
         <Phone>310-555-5556</Phone>
         <Email>julie_doe@isp.net</Email>
      </Contact>
   </Disposition>
```

```
    <Mapping OriginalIP="168.0.0.143" OriginalPort="21123"
       MappedIP="10.1.223.17" MappedPort="6881" LeaseTime="12:00:00.0"
       LeaseHeld="36:20:00.0Z" Time="2008-08-30T12:35:00Z"  />
</InternalTracking>
```

6.1.1 Subject Element

The Subject Element describes the subscriber, user or other person who is the subject of the notice.

Element	Attribute	Definition	Value
Subject			
SubjectContact		Contact information for the subject in question	See Contact Element
SubjectID		An identifier that is unique to a subject such as a subscriber number or student ID. Value defined within organization	xs:string
	type	Type of the ID. Value defined within the organization	xs:string

6.2 Disposition Element

The Disposition Element provides for tracking of actions taken at each step along the way.

Element	Attribute	Definition	Value
Disposition			
	Sequence	Increasing sequence number for this disposition	xs:int
	Start	When did case enter this disposition	xs:dateTime
	End	When did disposition change. Omitted if still open	xs:dateTime
InternalStatus		Organization's internal tracking status	xs:string
Comments		Any comments on the disposition (optional)	xs:string
Contact		Zero or more points of contact of this disposition	See Contact Element

The Contact information is the administrative contact.

6.2.1 Mapping Element

The mapping element addresses how the external report was mapped to a given person.

This includes both the technical mapping as well as who it was actually mapped to. In some cases there may be multiple people responsible for an IP address (e.g., multiple roommates in a dorm room). This provides the ability to list those others responsible. Presumably, the action will be taken against the primary and this will be rolled up into the case.

Element	Attribute	Definition	Value
Mapping			
	OriginalIP	IP address detected externally	IP_Address (complex type defined in schema)
	OriginalPort	Port detected externally	xs:int [0..65535]
	OriginalProtocol	Protocol used. May be necessary if ports are reused across protocols.	xs:int[0..254]
	MappedIP	Internal IP address	IP_Address (complex type defined in schema)
	MappedPort	Internal port	xs:int [0..65535]
	Time		xs:dateTime
	LeaseTime	Lease time	xs:time
	LeaseHeld	How long the IP was leased	xs:time
IPAssignee		Zero or more who are authorized to use IP	See Subject Element
	Primary	Is this the person with primary responsibility	xs:boolean
	Relationship	If not the primary, what is their relationship to the primary (e.g., "roommate")	xs:string

OriginalProtocol IANA defined protocol number. See
http://www.iana.org/assignments/protocol-numbers/protocol-numbers.xhtml

7 XML SCHEMAS AND EXAMPLES

7.1 Schemas

Information on ACNS 0.7 can be found here: http://mpto.unistudios.com/xml/

ACNS 2.0 Schema can be found here:
http://www.acns.net/<version>/acns2v<version>.xsd, for example,
http://www.acns.net/v1.1/ACNS2v1_1.xsd.

7.2 ACNS 0.7/2.0 Example

Note that since ACNS 2.0 is backwards compatible, all ACNS 0.7 examples are still relevant.

```xml
<?xml version="1.0" encoding="iso-8859-1"?>
<Infringement xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="Infringement_schema-0.7.xsd">
    <Case>
        <ID>A1234567</ID>
        <Ref_URL>http://www.contentowner.com/trackingid.asp?A1234567</Ref_URL>
        <Status> Open</Status>
        <Severity>Normal</Severity>
    </Case>
    <Complainant>
        <Entity>Content Owner Inc.</Entity>
        <Contact>John Doe</Contact>
        <Address>100 Anywhere Street, Anywhere, CA 90000</Address>
        <Phone>555-555-1212</Phone>
        <Email>antipiracy@contentowner.com</Email>
    </Complainant>
    <Service_Provider>
        <Entity>ISP Broadband Inc.</Entity>
        <Contact>John Doe</Contact>
        <Address>100 Anywhere Street, Anywhere, CA 90000</Address>
        <Phone>555-555-1212</Phone>
        <Email>dmca_agent@ispbroadband.net</Email>
    </Service_Provider>
    <Source>
        <TimeStamp>2003-08-30T12:34:53Z</TimeStamp>
        <IP_Address>168.1.1.145</IP_Address>
        <Port>21</Port>
        <DNS_Name>pcp574.nshville.tn.ispbroadband.net</DNS_Name>
        <MAC_Address>00-00-39-B6-00-A4</MAC_Address>
        <IP_Block>?????</IP_Block>
        <Type>FTP</Type>
        <URL_Base>ftp://guest:freepwd@168.1.1.145/media/8Mile/</URL_Base>
        <UserName>guest</UserName>
        <Login Username="guest" Password="freepwd"/>
        <Number_Files>324</Number_Files>

    </Source>
    <Content>
        <Item>
            <TimeStamp>2003-08-30T12:34:53Z</TimeStamp>
```

```xml
        <Title>8 Mile</Title>
        <FileName>8Mile.mpg</FileName>
        <FileSize>702453789</FileSize>
        <URL>ftp://guest:freepwd@168.1.1.145/media/8Mile/8mile.mpg</URL>
        <Type>Movie</Type>
        <Hash Type="SHA1">EKR94KF985873KD930ER4KD94</Hash>
    </Item>
    <Item>
        <TimeStamp>2003-08-30T12:34:53Z</TimeStamp>
        <Title>Lose Yourself</Title>
        <Artist>Eminem</Artist>
        <FileName>eminem_loseyourself.mp3</FileName>
        <FileSize>4235654</FileSize>

    <URL>ftp://guest:freepwd@168.1.1.145/media/8Mile/eminem_loseyourself.mp3</URL>
        <Type>SoundRecording</Type>
        <Hash Type="SHA1">B5A94KF93673KD930D21DFD94</Hash>
    </Item>
</Content>
<History>
    <Notice ID="12321" TimeStamp="2003-08-30T10:23:13Z">freeform text area</Notice>
    <Notice ID="19832" TimeStamp="2003-08-30T11:03:00Z">freeform text area</Notice>
</History>
<Notes>
Open area for freeform text notes, filelists, etc...

drwxr-xr-x   2 staff    ftp             4096 May 15 13:21 morestuff
-rw-r--r--   1 staff    ftp        702453789 Mar 24 15:34 8Mile.mpg
-rw-r--r--   1 staff    ftp          4235654 Mar 24 07:44
eminem_loseyourself.mp3
-rw-r--r--   1 staff    ftp          3914249 Apr  4 07:53 xzibit_spitshine.mp3
-rw-r--r--   1 staff    ftp          1525267 Feb 24 16:39 50cent_wanksta.mp3
-rw-r--r--   1 staff    ftp            25188 Feb 24 16:42 coverart.jpg
</Notes>
</Infringement>
```

7.3 ACNS 2.0 Examples

NOTICE

All names, organizations and contact information are made up and are not intended to correspond with any actual entity. Some content information is real. Some examples are not current.

7.3.1 Infringement

Following is an example (version is 0.9).

```xml
<?xml version="1.0" encoding="UTF-8"?>
```

```xml
<!--Sample XML file generated by XMLSpy v2008 rel. 2 sp2
(http://www.altova.com)-->
<Infringement xsi:schemaLocation="http://www.acns.net/v1.1/ACNS2v1_1.xsd"
xmlns="http://www.acns.net/ACNS" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
    <Case>
        <ID>A1234567</ID>

    <Ref_URL>http://www.contentowner.com/trackingid.asp?A1234567</Ref_URL>
        <Status> Open</Status>
        <Severity>Normal</Severity>
    </Case>
    <Complainant>
        <Entity>ScannerVendor, Inc.</Entity>
        <Contact>Jonathan Doe</Contact>
        <Address>100 Anywhere Street, Anywhere, CA 90000, USA</Address>
        <Phone>650-555-5555</Phone>
        <Email>notice@scannervendor.com</Email>

    <ContactURL>https://www.scannervendor.com/complaints.php</ContactURL>
    </Complainant>
    <Service_Provider>
        <Entity>GreatISP</Entity>
        <Contact>Jack Doah</Contact>
        <Address>1234 My Street, Everwhere, NY, 10001, USA</Address>
        <Phone>212-555-5555</Phone>
        <Email>abuse@greatisp.net</Email>
        <ContactURL>http://www.greatisp.net/gotanotice</ContactURL>
    </Service_Provider>
    <Source>
        <TimeStamp>2008-08-30T12:34:53Z</TimeStamp>
        <IP_Address>168.1.1.145</IP_Address>
        <Port>21123</Port>
        <DNS_Name>pcp574.nshville.tn.ispbroadband.net</DNS_Name>
        <MAC_Address>00-00-39-B6-00-A4</MAC_Address>
        <Type>BITTORRENT</Type>
        <SubType Protocol="BITTORRENT" Application="Azureus"
BaseType="P2P"></SubType>
        <Number_Files>1</Number_Files>
    </Source>
    <Content>
        <Item>
            <TimeStamp>2008-08-30T12:34:53Z</TimeStamp>
            <AlsoSeen Start="2008-08-30T12:34:53Z" End="2008-08-
30T14:32:00Z"></AlsoSeen>
            <AlsoSeen Start="2008-08-30T18:04:22Z" End="2008-08-
30T20:45:23Z"></AlsoSeen>
            <Title>8 Mile</Title>

    <FileName>8_Mile[2002]DvDrip[Eng].4473459.TPB.torrent</FileName>
            <FileSize>734013472</FileSize>
            <Type>Movie</Type>
            <ExplicitType>Movie</ExplicitType>
            <Hash
Type="SHA1">6AF9F5BF5493B6BB72F15F77C2E541D606328AEA</Hash>
```

```xml
                </Item>
            </Content>
            <History>
                <Notice ID="A1234567" TimeStamp="2008-08-30T20:46:00Z"><![CDATA[
Dear ISP,

It has come to our attention that on August 30, 2008 a subscriber was
uploading the movie 8 Mile using Azureus.  We respectfully request that you
ask your subscriber to delete this file and stop making it available on P2P
networks.


The specifics follow:

Notice: A1234567
Time first seen: 2008-08-30T12:34:53Z
Title: 8 Mile
FileName: 8_Mile[2002]DvDrip[Eng].4473459.TPB.torrent
FileSize" 734013472
Type: Movie
SHA1 hash: 6AF9F5BF5493B6BB72F15F77C2E541D606328AEA


If you have any questions, please contact:
Jonathan Doe
ScannerVendor,
100 Anywhere Street
Anywhere, CA 90000, USA
650-555-5555
notice@scannervendor.com
or use your login to
https://www.scannervendor.com/complaints.php and reference notice A1234567


Best Regards,
Jon
]]>
                </Notice>
            </History>
            <Type Retraction="false" Comments="Informational Notice">INFO</Type>
            <Detection>
                <Asset>
                    <OriginalAssetName>8 Mile</OriginalAssetName>
                    <OriginalAssetID type="ISAN">0000-0000-F23C-0000-J-0000-0000-
H</OriginalAssetID>
                </Asset>
                <ContentMatched Fingerprint="true" Video="true" Audio="true"
MatchThreshold="100" Human="true"/>
                <HashMatched>true</HashMatched>
                <MetadataMatched>true</MetadataMatched>
                <VerificationID> SuperMatcher v2.7 Build 302</VerificationID>
            </Detection>
            <InternalTracking InternalCaseNumber="ISP1234567" CurrentSequence="1">
                <PrimarySubject>
                    <SubjectContact>
                        <Contact>Joe Pirate</Contact>
                        <Address>100 My Street, Anywhere, CA 90000</Address>
                        <Phone>310-555-5555</Phone>
```

```xml
                <Email>joe_pirate@isp.net</Email>
            </SubjectContact>
            <SubjectID type="SubscriberNum">Sub123549991</SubjectID>
        </PrimarySubject>
        <Disposition Start="2008-12-17T09:30:47.0Z" End="2008-12-17T09:30:47.0Z"  Sequence="0">
            <InternalStatus>2nd Notice</InternalStatus>
            <Comments>Having difficulty reaching subscriber</Comments>
            <Contact>
                <Contact>Julie Doe, Abuse Coordinator</Contact>
                <Phone>310-555-5556</Phone>
                <Email>julie_doe@isp.net</Email>
            </Contact>
        </Disposition>
        <Mapping OriginalIP="168.0.0.143" OriginalPort="21123" MappedIP="10.1.223.17" MappedPort="6881" LeaseTime="12:00:00.0" LeaseHeld="36:20:00.0Z" Time="2008-08-30T12:35:00Z"  />
    </InternalTracking>
    <TextNotice><![CDATA[
Dear ISP,

It has come to our attention that on August 30, 2008 a subscriber was
uploading the movie 8 Mile using Azureus.  We respectfully request that you
ask your subscriber to delete this file and stop making it available on P2P
networks.

The specifics follow:

Notice: A1234567
Time first seen: 2008-08-30T12:34:53Z
Title: 8 Mile
FileName: 8_Mile[2002]DvDrip[Eng].4473459.TPB.torrent
FileSize" 734013472
Type: Movie
SHA1 hash: 6AF9F5BF5493B6BB72F15F77C2E541D606328AEA

If you have any questions, please contact:
Jonathan Doe
ScannerVendor,
100 Anywhere Street
Anywhere, CA 90000, USA
650-555-5555
notice@scannervendor.com
or use your login to
https://www.scannervendor.com/complaints.php and reference notice A1234567

Best Regards,
Jon
]]></TextNotice>
</Infringement>
```

7.3.2 Notice Ack

```xml
<?xml version="1.0" encoding="UTF-8"?>
```

```xml
<!--Sample XML file generated by XMLSpy v2008 rel. 2 sp2
(http://www.altova.com)-->
<NoticeAck xsi:schemaLocation="http://www.acns.net/v1.1/ACNS2v1_1.xsd"
xmlns="http://www.acns.net/ACNS" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" Accepted="true" Sequence="0" TimeStamp="2008-08-30T12:41:00Z">
      <Case>
   <ID>A1234567</ID>
   <Ref_URL>http://www.contentowner.com/trackingid.asp?A1234567</Ref_URL>
      <Status> Open</Status>
      <Severity>Normal</Severity>
      </Case>
      <Complainant>
          <Entity>ScannerVendor, Inc.</Entity>
          <Contact>Jonathan Doe</Contact>
          <Address>100 Anywhere Street, Anywhere, CA 90000, USA</Address>
          <Phone>650-555-5555</Phone>
          <Email>notice@scannervendor.com</Email>

   <ContactURL>https://www.scannervendor.com/complaints.php</ContactURL>
   </Complainant>
   <Service_Provider>
      <Entity>GreatISP</Entity>
      <Contact>Jack Doah</Contact>
      <Address>1234 My Street, Everwhere, NY, 10001, USA</Address>
      <Phone>212-555-5555</Phone>
      <Email>abuse@greatisp.net</Email>
      <ContactURL>http://www.greatisp.net/gotanotice</ContactURL>
   </Service_Provider>
   <Addl_Contact>
          <Contact>Julie Doe, Abuse Coordinator</Contact>
          <Phone>310-555-5556</Phone>
          <Email>julie_doe@isp.net</Email>
   </Addl_Contact>
   <Notes>Good catch, thanks for the info.</Notes>
```

7.3.3 Status Request

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--Sample XML file generated by XMLSpy v2008 rel. 2 sp2
(http://www.altova.com)-->
<StatusRequest TimeStamp=""
xsi:schemaLocation="http://www.acns.net/v1.1/ACNS2v1_1.xsd"
xmlns="http://www.acns.net/ACNS" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
<Case>
   <ID>A1234567</ID>

   <Ref_URL>http://www.contentowner.com/trackingid.asp?A1234567</Ref_URL>
          <Status>First Notice, Open</Status>
          <Severity>Normal</Severity>
      </Case>
      <Complainant>
          <Entity>ScannerVendor, Inc.</Entity>
          <Contact>Jonathan Doe</Contact>
          <Address>100 Anywhere Street, Anywhere, CA 90000, USA</Address>
```

```xml
        <Phone>650-555-5555</Phone>
        <Email>notice@scannervendor.com</Email>

<ContactURL>https://www.scannervendor.com/complaints.php</ContactURL>
    </Complainant>
    <Service_Provider>
        <Entity>GreatISP</Entity>
        <Contact>Jack Doah</Contact>
        <Address>1234 My Street, Everwhere, NY, 10001, USA</Address>
        <Phone>212-555-5555</Phone>
        <Email>abuse@greatisp.net</Email>
        <ContactURL>http://www.greatisp.net/gotanotice</ContactURL>
    </Service_Provider>
</StatusRequest>
```

7.3.4 Status Update

7.3.4.1 Simple Status Update

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--Sample XML file generated by XMLSpy v2008 rel. 2 sp2
(http://www.altova.com)-->
<StatusUpdate ReqTime="" TimeStamp=""
xsi:schemaLocation="http://www.acns.net/v1.1/ACNS2v1_1.xsd"
xmlns="http://www.acns.net/ACNS" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
<Case>
    <ID>A1234567</ID>

    <Ref_URL>http://www.contentowner.com/trackingid.asp?A1234567</Ref_URL>
        <Status> Open</Status>
        <Severity>Normal</Severity>
    </Case>
    <Complainant>
        <Entity>ScannerVendor, Inc.</Entity>
        <Contact>Jonathan Doe</Contact>
        <Address>100 Anywhere Street, Anywhere, CA 90000, USA</Address>
        <Phone>650-555-5555</Phone>
        <Email>notice@scannervendor.com</Email>

<ContactURL>https://www.scannervendor.com/complaints.php</ContactURL>
    </Complainant>
    <Service_Provider>
        <Entity>GreatISP</Entity>
        <Contact>Jack Doah</Contact>
        <Address>1234 My Street, Everwhere, NY, 10001, USA</Address>
        <Phone>212-555-5555</Phone>
        <Email>abuse@greatisp.net</Email>
        <ContactURL>http://www.greatisp.net/gotanotice</ContactURL>
    </Service_Provider>
    <Disposition Status="CLOSED" infoStatus="ACTION" Level="2"/>
</StatusUpdate>
```

7.3.4.2 Status Update with Counternotice

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--Sample XML file generated by XMLSpy v2008 rel. 2 sp2
(http://www.altova.com)-->
<StatusUpdate ReqTime="" TimeStamp=""
xsi:schemaLocation="http://www.acns.net/v1.1/ACNS2v1_1.xsd"
xmlns="http://www.acns.net/ACNS" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
    <Case>
        <ID>A1234567</ID>

    <Ref_URL>http://www.contentowner.com/trackingid.asp?A1234567</Ref_URL>
        <Status> Open</Status>
        <Severity>Normal</Severity>
    </Case>
    <Complainant>
        <Entity>ScannerVendor, Inc.</Entity>
        <Contact>Jonathan Doe</Contact>
        <Address>100 Anywhere Street, Anywhere, CA 90000, USA</Address>
        <Phone>650-555-5555</Phone>
        <Email>notice@scannervendor.com</Email>
    <ContactURL>https://www.scannervendor.com/complaints.php</ContactURL>
    </Complainant>
    <Service_Provider>
        <Entity>GreatISP</Entity>
        <Contact>Jack Doah</Contact>
        <Address>1234 My Street, Everwhere, NY, 10001, USA</Address>
        <Phone>212-555-5555</Phone>
        <Email>abuse@greatisp.net</Email>
        <ContactURL>http://www.greatisp.net/gotanotice</ContactURL>
    </Service_Provider>
    <Disposition Status="COUNTERNOTICE"/>
    <CounterNotice DMCA="false" TimeStamp="2008-12-20T12:30:00.0Z">
        <Service_Provider>
            <Entity>GreatISP</Entity>
            <Contact>Jack Doah</Contact>
            <Address>1234 My Street, Everwhere, NY, 10001, USA</Address>
            <Phone>212-555-5555</Phone>
            <Email>abuse@greatisp.net</Email>
            <ContactURL>http://www.greatisp.net/gotanotice</ContactURL>
        </Service_Provider>
        <Subscriber>
            <Contact>Joe Pirate</Contact>
                <Address>100 My Street, Anywhere, CA 90000</Address>
                <Phone>310-555-5555</Phone>
                <Email>joe_pirate@isp.net</Email>
        </Subscriber>
        <CounternoticeContent RejectReason="OTHER"  OtherReason="I like
stealing" ProperlySigned="true" >
            <NoticeText>
```

```
<![CDATA[
This counternotice does not contain a valid justification, although it is
formed correctly.  I just like to steal file and share them.

Sincerely,
Joe Pirate]]>
        </NoticeText>
      </CounternoticeContent>
      <Notes>
      <![CDATA[This counternotice will not affect our process for
terminating subscription on the third strike. --Jack</Notes>]]>
      </Notes>
    </CounterNotice>
</StatusUpdate>
```