IPTC

IPTC - NAA

Information Interchange Model

Version 4

IPTC - NAA INFORMATION INTERCHANGE MODEL

Version No. 4
October 1997

Copy No:9999

TABLE OF CONTENTS

IPTC-NAA INFORMATION INTERCHANGE MODEL PART I

Chapter 1.   GENERAL

Section 1.1 INTRODUCTION

Section 1.2 World-wide standardisation has become an acknowledged requirement in the graphics and information industry. In telecommunications, standardisation is centred upon the widely accepted seven-layer "Open Systems Interconnection" (OSI) model. While the lower five or six layers of this model are filled by other bodies, such as telecommunications companies or administrations, the CCITT, the ISO and manufacturers, it remains the responsibility of the users of information to define the model for the dissemination of data.

Section 1.3 The Newspaper Association of America (NAA) and the International Press Telecommunications Council (IPTC) have worked jointly to design a globally applicable model for all kinds of data. Every effort has been made for this model to be as compatible as possible with ISO and CCITT standards in the fields of application. The joint effort will continue for further development and for amendment when advisable.

Section 1.4 This model is designed to provide for universal communications embracing all types of data, including text, photos, graphics, etc. on a single network or a single storage medium. A mechanism is provided to use existing formats during transition.

Section 1.5 The model assumes that the sender wishes to transfer a data object, such as a photographic image, text or perhaps a combination of many types. An envelope is provided around the object for information as to the type of data and the file format. Additional information, such as caption, news category or dateline also is included. The object itself is transferred, together with information regarding the size of the data.

Section 1.6 Thus ANY form of computerised data may be transferred, together with pertinent editorial and technical information.

Section 1.7 Older practice consisted primarily of rigidly formatted "headers" with a number of required fields denoting such things as story priority or category. The

model here presented has relatively few required pieces of information. Instead, the information about the object consists of "DataSets," each with its own identifier. Only those DataSets required for an application are mandatory. Other DataSets are optional and are utilised only when the provider deems it necessary to do so.

Section 1.8 SCOPE

This document defines:

- The envelope for information.

- The method by which existing standards for news information can be included.

- The records for additional information about the object.

- The data structure to be used for presentation of information.

- An application record to provide pertinent editorial information about the object to be transmitted.

- Guidelines for implementation.

Section 1.9 FIELD OF APPLICATION

(a) This document applies to the digital data distributed by news service carriers to their subscribers or interchanged between individual users.

Section 1.10 RELATION TO OSI

(a) This document describes the standardised representation of news information for the applications layer (Layer 7) of the ISO Open Systems Interconnection Model (OSI). NOTE: The association to OSI layers may be redefined as OSI connectionless application standards are developed.

Section 1.11 MODEL DEVELOPMENT

(a) The introduction of new DataSets (or dropping of old) in records 1, 2, 7, 8 and 9 will occur only after international concurrence.

(b) Records 3 through 6 will be managed by originators of the formats contained in record No. 1.

TERMS, DEFINITIONS AND NOTATION

For the purpose of this recommendation, the following definitions apply:

Section 1.12 Actuality: The sound of a newsmaker, e.g. from a speech, interview, etc. Also known as a "sound bite."

Section 1.13 AIFF: A sound file format for the Apple Macintosh, can be converted to WAVE and vice versa.

Section 1.14 alphabetic, alphabetic character: An alphabetic character is member of a set of characters representing letters of the alphabet.

Example: In the ISO 646 character set, alphabetic characters are between 4/1 and 5/10 (A through Z) and between 6/1 and 7/10 (a through z), all inclusive. Alphabetic characters are shown in this document enclosed in single quotation marks, e.g. 'a', 'T', 'u'.

A series of alphabetic characters is shown in double quotation marks, e.g. "IPTC", "Berlin", "Paris".

Section 1.15 binary number: A series of n data bits b_{n-1}, b_{n-2} ... b_0 where b_{n-1} is the highest order, or most significant bit and b_0 is the lowest order, or least significant bit. As represented in this document, binary numbers always are expressed from left to right with the left-most bit the most significant bit and the right-most bit the least significant bit. If the binary numbers are formed by multiple octets, the bits forming any octet are presumed to be less significant than those of any octet to the left and more significant than those of any octet to the right. For example, if two octets, numbered left to right as 1 and 2, are taken together as a binary number, octet No. 1 will contain the most significant bits.
Decimal Interpretation:

The bit combinations are identified by notations of the form xxx..., where xxx... is a number in the range 000-infinity. The correspondence between the bits and their value is as follows:

Bits b_{n-1}, b_{n-2} ... b_0

Weight 2^{n-1}, 2^{n-2} ... 2^0

The least significant bit, i.e. the bit of lowest value always is aligned with the least significant bit of the octet or other data frame containing it.

Section 1.16 bit resolution: The accuracy of digitisation, e.g. 8-bit or 16-bit. Along with duration, sampling rate and number of channels (mono/stereo), affects the size of the audio file.

Section 1.17 CCITT: Comité Consultatif International Télégraphique et Téléphonique. Defunct organisation. Formerly an organisation of telephone and telegraph providers with headquarters in Geneva, Switzerland. Replaced in December 1992 by a division of the International Telecommunications Union (ITU) Standardization Sector.

Section 1.18 character: A member of a set of elements used for the organisation, control or representation of data.

Section 1.19 code table: A table showing the character allocated to each bit combination in a code.

Section 1.20 Co-ordinated Universal Time (UTC): The time scale defined by the Bureau International de l'Heure (International Time Bureau) that forms the basis of a co-ordinated dissemination of standard frequencies and time signals. The mismatch of ordering of characters between the name and initials is intentional.

> 1, The source of this definition is Recommendation 460-2 of the Consultative Committee on International Radio (CCIR). CCIR has also defined the acronym for Co-ordinated Universal Time as UTC.
>
> 2, UTC is often (incorrectly) referred to as Greenwich Mean Time and appropriate signals are regularly broadcast.

Section 1.21 cut: A single audio object within the IIM envelope, e.g. actuality, wrap.

Section 1.22 day: A period of time of 24 hours starting at 0000 and ending at 2400 (which is equal to 0000 the following day).

Section 1.23 editorial information: Information primarily of interest to editors concerning the content of the object, such as date and place of creation, name of creator, etc. This information is contained in DataSets 2:xx of the Universal Application Record.

Section 1.24 editorial material: Data contained in the object that represents observations, opinions or analysis of the provider as opposed to statistical data, that simply reports data such as temperatures, sports scores, financial market prices, etc.

Section 1.25 graphic character: A member of a subset of a set of characters. The graphic character subset includes all characters that have visual representation, normally hand-written, printed or displayed, and that has a coded representation consisting of one or more bit combinations. Control codes, space character (ISO

646 2/0) and DEL (ISO 646 7/15) are not graphic characters. The sets of alphabetic and numeric characters are subsets of the set of graphic characters. Graphic characters are shown in this document enclosed in single quotation marks, e.g. '*', 'T', '-'. A series of graphic characters are shown in double quotation marks, e.g. "IPTC-7901", "DÜSSELDORF", "$1.99". Note that the visual representation of a graphic character depends upon the character set invoked at the time of evaluation.

Section 1.26 International Press Telecommunications Council (IPTC): An organisation of news agencies, newspapers and other news organisations, with headquarters in Windsor and formed for the establishment of news transmission standards and other activities for the common benefit of its members. (Also known as the Comité International des Télécommunications de Presse.)

The address is found in Appendix B.

Section 1.27 International Organization for Standardization (ISO): An international body with headquarters in Geneva, Switzerland, to co-ordinate the work of national bodies such as ANSI, BSI or DIN. Also involved are IEEE, ECMA and the IPTC. ISO is broadly responsible for standards that operate over communications media. The mismatch of ordering of characters between the name and initials is intentional.

Section 1.28 ISO 646: A coded set of characters based upon seven significant bits. ISO 646 has numerous national versions. Unless otherwise specified, all references herein contained are to the International Reference Version.

Section 1.29 ITU: International Telecommunications Union. An organisation of telephone and telegraph providers with headquarters in Geneva, Switzerland. The ITU reports to the United Nations Organisation (UNO). All telecommunications administrations and recognised private common carriers belong to the ITU. The address is found in Appendix B.

Section 1.30 minute: A period of time of 60 seconds.

Section 1.31 month, calendar: A period of time resulting from the division of a calendar year in twelve sequential periods of time, each with a specific name and containing a specific number of days.

Section 1.32 MPEG: Motion Picture Experts Group, Coding of Moving Pictures and Associated Audio for Digital Storage Media, ISO/IEC 11172-3, Part 3 being the section concerned with digital audio.

Section 1.33 NAA: The Newspaper Association of America was created on 1 June 1992 from the American Newspaper Publishers Association (ANPA), the Newspaper

Advertising Bureau (NAB), and six other newspaper associations. NAA represents nearly 2000 newspapers in the United States, Canada, and around the world. The address is found in Appendix B.

Section 1.34 numeric, numeric character: The textual representation by means of a specific character set of the binary values 0-9 in decimal notation. Numeric characters are a subset of the set of graphic characters and are the characters '0', '1', '2', '3', '4', '5', '6', '7', '8', '9'. In this document, numeric characters are enclosed in single quotation marks. Series of numeric characters are enclosed in double quotation marks, e.g. "23", "124".

Section 1.35 object: A term to describe the entire data collection of all records, excluding record 1 DataSets concerned with data transmission, for an instance under the Information Interchange Model.

Section 1.36 objectdata: A collection of binary data, such as a photo, news graphic or text, that is the essence of the data to be presented and contained in Record 8.

Section 1.37 octet: A data frame of eight bits identified by b_7, b_6, b_5, b_4, b_3, b_2, b_1 and b_0 where b_7 is the highest order, or most significant bit and b_0 is the lowest order, or least significant bit.

Unless otherwise specified, all references to bits of octets herein described are from left to right with the most significant bit on the left and the least significant bit on the right.

Character Definition by Chart Position:

The bit combinations are identified by notations of the form xx/yy, where xx and yy are numbers in the range 00-15 or x/y where x and y are numbers in the range 0-7. The correspondence between the notations of the form xx/yy and the bit combination consisting of the bits b_7-b_0 are as follows:

	xx				yy			
Bits	b_7	b_6	b_5	b_4	b_3	b_2	b_1	b_0
Weight	8	4	2	1	8	4	2	1

The bit combinations are identified by notation of the form xxx, where xxx is a number in the range 000-255. The correspondence between the notations of the form xxx and the bit combination consisting of the bits b_7-b_0 are as follows:

Decimal Interpretation:

Bits	b_7	b_6	b_5	b_4	b_3	b_2	b_1	b_0
Weight	128	64	32	16	8	4	2	1

Section 1.38 outcue: The last spoken words heard on the audio, used to help editors and news anchors construct program scripts and resume speaking after the broadcast of an audio file.

Section 1.39 OSI model: OSI stands for Open Systems Interconnection, a term used to describe the agreed international standards by which open systems communicate. The OSI model, jointly defined by CCITT and the ISO, is an architectural model with seven layers. Layers 5 through 7 (Session, Presentation, Application) concern the functions of interworking. The model is described in the ISO 7498 standard.

Section 1.40 sampling rate: The frequency at which analogue audio signals are measured. Each sample is a measure of the signal's level at a discrete time. Along with bit resolution, duration and number of channels (mono/stereo), affects the size of an audio file.

Section 1.41 scener: An audio report in which a correspondent describes a scene being viewed, usually with natural sound background.

Section 1.42 second: A basic unit of measurement of time in the International System of Units (SI) as defined in ISO 31-1.

Section 1.43 Unicode: Version 2 of the uniform encoding scheme for written characters and text. Published by the Unicode Consortium in ISBN 0-201-48345-9.

Section 1.44 Unstructured Character Oriented File Format (UCOFF): The UCOFF consists of a collection of data mapped to the coded character set ISO 646 IRV unless defined otherwise in DataSet 1:90. The UCOFF is intended to be a means of exchanging data commonly known as "text", including non-printing characters as defined within the coded character set. The UCOFF is not intended to be a "catch all" means of transmitting unregistered file formats. Implementors or users of formatted data should seek appropriate registration.

Section 1.45 UTF-8: Universal Multiple-Octet Coded Character Set (UCS) Transformation Format-8 as specified in the Unicode Technical Report #4 and outlined in RFC 2044. UTF-8 allows Unicode data to be encoded into a varying number of octets depending on the integer value assigned to the original character. In particular Unicode character values from 0 to 127 are encoded in UTF-8 using the

same octet values as in ISO 646. May be used when transmitting data through 8-bit oriented protocols

Section 1.46 voicer: An audio report which consists solely of a correspondent's voice.

Section 1.47 WAVE: Also known as RIFF WAVE, a file format developed by Microsoft and IBM consisting of a header section that describes the recording parameters of the audio and the audio data itself. Can be converted to AIFF and vice versa.

Section 1.48 wrap: An audio report which includes the voices of both a correspondent (or correspondents) and a newsmaker (or newsmakers).

Section 1.49 year, calendar: A cyclic period of time in a calendar that is required for one revolution of the earth around the sun.

Chapter 2.   INFORMATION INTERCHANGE MODEL

Section 1.1 Functionality

The Information Interchange Model consists of a number of records in a structure described below and which detail into five sub-layers, namely:

- Object Envelope Record, DataSets in the range of 1:xx

- Application Records, DataSets in the range 2:xx through 6:xx

- Pre-ObjectData Descriptor Record, DataSets in the range 7:xx

- ObjectData Record, DataSets in the range 8:xx

- Post-ObjectData Descriptor Record, DataSets in the range 9:xx

(a) Functionality of the Object Envelope Record

This record is mandatory and envelops all types of objectdata, including data encapsulated in previously defined formats or headers, which themselves can be enveloped by the 1:xx record, thus enabling the use of older formats within the new model. Within record 1:xx, DataSets 1:00, 1:20, 1:22, 1:30, 1:40 and 1:70 are mandatory.

(i) File Formats are valid only by international agreement and are to be found in Appendix A to this document.

(ii) The DataSets will permit a single link to be used for transmission of any type of data. The recipient may sort or buffer data temporarily so that the data may be sent to the appropriate subsystem.

(b) Functionality of the Application Records

(i) Since the model is designed to encapsulate older formats, if required, some means must be provided to supply information that otherwise might not be provided in those older formats. Records 2:xx through 6:xx provide the capability to do this. Records 2:xx through 6:xx may optionally be used regardless of whether they duplicate any information that might be contained within the envelope record.

(c) Functionality of the Pre-ObjectData Descriptor Record

(i) Record 7:xx is mandatory and provides a means of describing the size of the objectdata file.

IPTC-NAA Information Interchange Model Version No. 4   **Page** 12

October 1997

(d) Functionality of the ObjectData Record

  (i) Record 8:xx is mandatory and provides the actual objectdata contained in one or more DataSets. The object may be sent in one or more packets of DataSet 8:10, however, the DataSets must occur in sequential order without intervening DataSets.

(e) Functionality of the Post-ObjectData Descriptor Record

  (i) Record 9:xx is mandatory and gives the size of the objectdata file.

Chapter 3.   RECORDS

Section 1.1 Ordering of Records

(a) Records must be in numerical order. However, DataSets within a record need not be in numerical order, unless otherwise specified in the DataSet description.

Section 1.2 Occurrence of Records

(a) If the provider elects to use Part II of the Model (Records No. 2 through No. 6), they should appear only in one iteration, e.g. there should be no more Record 2s after Record 6.

Section 1.3 Record Structure

(a) Each record is composed of DataSets:

Record		
DataSet 1	DataSet 2	DataSet 3

Section 1.4 DataSets

(a) Each DataSet consists of a unique tag and a data field.

(b) Only a few DataSets have fixed length: all DataSets (except for record 8 containing the object) have maximum length, although in most cases it is not required to fill that length. There is no end-of-DataSet marker.

(c) The tag identifier is globally unique in the usage of records 1, 7, 8 and 9. In records 2 through 6 different usage may occur for different types of data.

(d) There are two types of DataSets: standard and extended. A standard tag is utilised when the number of octets in the data field is equal to or less than 32767. Otherwise, the extended DataSet is used.

Standard DataSet	
Tag	Data Field

Extended DataSet		
Tag	Data Field Octet Count	Data Field

Section 1.5 Tags

(a) General

Tags may be of two types, depending upon whether the length of the data field is equal to or less than 32767 (decimal) octets in length.

(b) The Standard DataSet Tag

(i) If the length of the data field is equal to or less than 32767 octets in length, the tag is composed of five octets defined as follows.

Standard DataSet Tag				
1	2	3	4	5
Tag Marker	Record Number	DataSet Number	Data Field Octet Count	

(ii) Octet 1 is the tag marker that initiates the start of a DataSet and is always position 1/12.

(iii) Octet 2 is the binary representation of the record number. Note that the envelope record number is always 1, and that the application records are numbered 2 through 6, the pre-object descriptor record is 7, the object record is 8, and the post-object descriptor record is 9.

(iv) Octet 3 is the binary representation of the DataSet number.

(v) Octets 4 and 5, taken together, are the binary count of the number of octets in the following data field (32767 or fewer octets). Note that the value of bit 7 of octet 4 (most significant bit) always will be 0.

(c) The Extended DataSet Tag

If the length of the data field is greater than 32767 octets, the tag is composed of five octets defined as follows plus a field describing the length of the data field. The length of the Data Field Length Descriptor is provided in binary form in the 15 least significant bits of octets 4 and 5 taken together as a binary number. The value of the most significant bit (bit 7 of octet 4) always is 1 to flag that the extended DataSet is in effect. Otherwise, it is constructed

the same as the Standard DataSet Tag.

Extended DataSet Tag					
1	2	3	4　　5		6 . . . n
Tag Marker	Record Number	DataSet Number	Length of Data Field Octet Count Field		Data Field Octet Count

Section 1.6 Coded Character Set

(a) Record 1:xx shall use coded character set ISO 646 International Reference Version or ISO 4873 Default Version .

Section 1.7 Envelope Record DataSets

(a) Interpretation

(i) Some DataSets are described as "publishable." The information in such DataSets is expected to be composed in such a way that it can be printed or otherwise published "as is."

(ii) Some DataSets are described as "advisory." The information in such DataSets is expected to be human-readable. NO machine-readable information should be anticipated in these DataSets.

(b) Encapsulation of Older Formats

(i) If a receiving system reads the file format as an existing header and content format such as IPTC7901, it may then interpret DataSet 8:10 (Object) as a switch to begin accepting data and interpreting in that format. In such a case, that format's end of data signal would function as the signal to return to the envelope record level or to return control to lower layers, whichever is appropriate.

Likewise, upon finding that the defined format has its own specific application records, the DataSets of records 2-6 will be interpreted in the manner specific to that format.

Chapter 4. IMPLEMENTATION GUIDELINES

This section is for the software engineer or programmer to use as a guideline when implementing this model.

Section 1.1 There is no end-of-DataSet marker. If the receiving system has not detected a new DataSet in the first octet following the end of the preceding data field, as described by the length, the system should assume an error and recover accordingly.

Section 1.2 An input program should use the octet counts and not simply search for tag markers as delimiters because the fields can contain binary data that may be of the same value as the tag markers themselves.

Section 1.3 A program should ignore a DataSet it does not recognise without rejecting the otherwise acceptable data or terminating the application program. In this manner information that might be provided in new application records will not affect unmodified programs.

Section 1.4 A program encountering a DataSet with a repeated tag number should assume that it is "more or another of the same", e.g. as where a sequence of subfiles (or sub-images) is encountered. If a repeated tag number is encountered for a DataSet defined as non-repeatable, an error condition is assumed and handled without aborting the program and without aborting data capture, i.e. the data of the first-encountered DataSet should be retained. The maximum number of repeats is not defined. Where DataSets are repeatable, only one piece of data should be included in that DataSet. For example, a DataSet defining news categories should include one category per DataSet.

Section 1.5 A single transmission can include multiple objects of various types of data. If layer 5 or 6 of the OSI model has not received an end-of-transmission, the receiving system should expect to receive a DataSet 1:xx and subsequent DataSets.

Section 1.6 If the Envelope Record File Format DataSet (1:20) identifies an existing format, such as NAA 89-3 (ANPA 1312) or IPTC 7901, the system may branch to Record 7:xx or to the header fields as identified in the existing format. Programmers are advised to look for the presence of the record No. 2 in order to take advantage of additional information that it might provide.

Section 1.7 If the File Format (1:20) identifies a format that has no means of providing pertinent editorial information or whose information is insufficient, the sender is expected to use Record No. 2 as herein provided. Programmers should ensure that presence of Record No.2, if not expected, does not cause the program to abort or reject otherwise acceptable data.

Section 1.8 Image Type (2:130) is designed to be used where the file formats utilised by the provider do not otherwise provide that information. If there is a conflict between DataSet 2:130 and any DataSet in Record No.3 the Record No.3 DataSet takes precedence.

Section 1.9 DataSet 8:10.   If the object is sub-divided and placed into multiple DataSets 8:10 there may be no correlation between the nature of the object and the sub-division structure. The division of the object into subfiles may be necessary because of equipment design constraints but has no relation to the object itself.

Section 1.10 The UNO (DataSet 1:100) is new in version 3 of the IIM and specified herein as 'optional'. It should be noted, however, that information provided under version 3 generally contains the UNO and that receiving software for version 3 should fully support DataSet 1:100. It should furthermore be noted that in future versions of the IIM, the UNO might be made mandatory and that DataSets 2:45, 2:47 and 2:50 for reference to an object might be removed.

Section 1.11 The Object Type and Object Attribute (DataSets 2:03 and 2:04) and the Subject Reference (DataSet 2:12) are new in version 4 of the IIM. With the introduction of these new DataSets, that are a method of describing a News Objects contents, the DataSets 2:10 and 2:15 are indicated as "Deprecated". Appendices G,H,I and J have also been added in version 4.

Section 1.12 DataSet octet sizes do not imply character sizing. The number of characters will depend on the encoding method specified. The number of octets specified within a DataSet Data Field Octet Count will always be equal to or greater than the number of characters of data represented.

Section 1.13 Advice on the use of the Subject reference DataSets is available in the separately published IIM Guideline 3 document. See also http://www.iptc.org/iptc for latest information.

Chapter 5. ENVELOPE RECORD

| DATASET NAME | DESCRIPTION |

1:00 Model Version

Mandatory, not repeatable, two octets.

A binary number identifying the version of the Information Interchange Model, Part I, utilised by the provider. Version numbers are assigned by IPTC and NAA.

The version number of this record is four (4).

1:05 Destination

Optional, repeatable, maximum 1024 octets, consisting of sequentially contiguous graphic characters.

This DataSet is to accommodate some providers who require routing information above the appropriate OSI layers.

1:20 File Format

Mandatory, not repeatable, two octets.

A binary number representing the file format. The file format must be registered with IPTC or NAA with a unique number assigned to it (see Appendix A). The information is used to route the data to the appropriate system and to allow the receiving system to perform the appropriate actions thereto.

1:22 File Format Version

Mandatory, not repeatable, two octets.

A binary number representing the particular version of the File Format specified in 1:20.

A list of File Formats, including version cross references, is included as Appendix A.

1:30 **Service Identifier** Mandatory, not repeatable. Up to 10 octets, consisting of graphic characters.

Identifies the provider and product.

1:40 **Envelope Number** Mandatory, not repeatable, eight octets, consisting of numeric characters.

The characters form a number that will be unique for the date specified in 1:70 and for the Service Identifier specified in 1:30. If identical envelope numbers appear with the same date and with the same Service Identifier, records 2-9 must be unchanged from the original. This is not intended to be a sequential serial number reception check.

1:50 **Product I.D.** Optional, repeatable. Up to 32 octets, consisting of graphic characters.

Allows a provider to identify subsets of its overall service. Used to provide receiving organisation data on which to select, route, or otherwise handle data.

1:60 **Envelope Priority** Optional, not repeatable. A single octet, consisting of a numeric character.

Specifies the envelope handling priority and not the editorial urgency (see 2:10, Urgency). '1' indicates the most urgent, '5' the normal urgency, and '8' the least urgent copy. The numeral '9' indicates a User Defined Priority. The numeral '0' is reserved for future use.

1:70 **Date Sent** Mandatory, not repeatable. Eight octets, consisting of numeric characters.

Uses the format CCYYMMDD (century, year, month, day) as defined in ISO 8601 to indicate year, month and day the service sent the material.

Example:
An entry of "19890412" indicates data sent on 12 April 1989.

1:80   Time Sent   Optional, not repeatable, 11 octets, consisting of graphic characters.

Uses the format HHMMSS±HHMM where HHMMSS refers to local hour, minute and seconds and HHMM refers to hours and minutes ahead (+) or behind (-) Universal Coordinated Time as described in ISO 8601. This is the time the service sent the material.

Example:
At 3:27 p.m. in New York in January it would be expressed as "152700-0500" as New York is five hours behind UTC. At the same moment in Paris, the time would be expressed as "212700+0100". In both instances the time is 20:27 (8:27 p.m.) UTC. Midnight should be expressed as "240000" (with the appropriate offset from UTC).

1:90   Coded Character Set   Optional, not repeatable, up to 32 octets, consisting of one or more control functions used for the announcement, invocation or designation of coded character sets. The control functions follow the ISO 2022 standard and may consist of the escape control character and one or more graphic characters.   For more details see Appendix C, the IPTC-NAA Code Library.

The control functions apply to character oriented DataSets in records 2-6. They also apply to record 8, unless the objectdata explicitly, or the File Format implicitly, defines character sets otherwise.

If this DataSet contains the designation function for Unicode in UTF-8 then no other announcement, designation or invocation functions are permitted in this DataSet or in records 2-6.
For all other character sets, one or more escape sequences are used:
- for the announcement of the code extension facilities used in the data which follows,
- for the initial designation of the G0, G1, G2 and G3 graphic character sets and
- for the initial invocation of the graphic set (7 bits) or the left-hand and the right-hand graphic set (8 bits) and for the initial invocation of the C0 (7 bits) or of the C0 and the C1 control character sets (8 bits).

The announcement of the code extension facilities, if transmitted, must appear in this data set. Designation and invocation of graphic and control function sets (shifting) may be transmitted anywhere where the escape and the other necessary control characters are permitted. However, it is recommended to transmit in this DataSet an initial designation and invocation, i.e. to define all designations and the shift status currently in use by transmitting the appropriate escape sequences and locking-shift functions.

If 1:90 is omitted, the default for records 2-6 and 8 is ISO 646 IRV (7 bits) or ISO 4873 DV (8 bits). Record 1 shall always use ISO 646 IRV or ISO 4873 DV respectively.

1:100   UNO   Optional, not repeatable. Minimum of 14 and maximum of 80 octets consisting of graphic characters. Colon ':' and solidus '/' are only allowed as specified, the asterisk '*' and question mark '?' are not allowed.

UNO Unique Name of Object, providing eternal, globally unique identification for objects as specified in the IIM, independent of provider and for any media form. The provider must ensure the UNO is unique. Objects with the same UNO are identical.

The UNO consists of four elements and provides the following functionality:

- **UNO Creation Date (UCD)**
  Specifies a 24 hour period in which the further elements of the UNO have to be unique. It also provides a search facility.
- **Information Provider Reference (IPR)**
  A name, registered with the IPTC/NAA, identifying the provider that guarantees the uniqueness of the UNO. It may assist in locating an object source.
- **Object Descriptor Element (ODE)**
  In conjunction with the UCD and the IPR, a string of characters ensuring the uniqueness of the UNO. The provider may structure the element by use of a solidus '/' character.
- **Object Variant Indicator (OVI)**
  A string of characters indicating technical variants of the object such as partial objects, or changes of file formats,

and coded character sets.

Rules

The rules for the generation of the UNO are:

- The first three elements of the UNO (the UCD, the IPR and the ODE) together are allocated to the editorial content of the object.
- Any technical variants or changes in the presentation of an object, e.g. a picture being presented by a different file format, does not require the allocation of a new ODE but can be indicated by only generating a new OVI.

Links

Links may be set up to the complete UNO but the structure provides for linking to selected elements, e.g. to all objects of a specified provider.

UNO Component Definitions

ES	Element Separator	Separates the elements within a UNO and consists of a single colon ':' character. All ES' are mandatory but must not appear within an element.
ESD	Element SubDivider	Subdivides the ODE or OVI at the discretion of the provider and consists of a single solidus '/' character.
IPR	Information Provider Reference	Second element of the UNO. A minimum of one and a maximum of 32 octets. A string of graphic characters, except colon ':' solidus '/', asterisk '*' and question mark '?', registered with, and approved by, the IPTC. A list of registered strings of the IPR is located in Appendix E.
ODE	Object Descriptor Element	Third element of the UNO. A minimum of one and a maximum of 60 minus the number of IPR octets, consisting of graphic characters, except colon ':' asterisk '*' and question mark '?'. The provider bears the responsibility for the uniqueness of the ODE within a 24 hour cycle.
OVI	Object Variant Indicator	Fourth element of the UNO. A minimum of one and a maximum of 9 octets, consisting of graphic characters, except colon ':', asterisk '*' and question mark '?'. To indicate a technical variation of the object as so far identified by the first three elements. Such variation may be required, for instance, for the

indication of part of the object, or variations of the file format, or coded character set. The default value is a single '0' (zero) character indicating no further use of the OVI.

UCD   UNO Creation Date   First element of the UNO. 8 octets in ISO 8601 date format (CCYYMMDD), consisting of numeric characters.

UNO   Unique Name of Object   A universally unique name consisting of four elements. Total UNO has a minimum of 14 and maximum of 80 octets.

UNO Structure

UNIQUE NAME of OBJECT (UNO)						
Minimum of 14 and maximum of 80 Octets for full UNO						
UCD	**ES**	**IPR**	**ES**	**ODE**	**ES**	**OVI**
CCYYMMDD (ISO 8601)	:	1 - 32 Octets registered with IPTC	:	Octets assigned by Provider of Object	:	Octets assigned by Provider of Object
8 Octets	*1*	*Maximum of 61 Octets including ES*			*1*	*Maximum of 9 Octets*

1:120   **ARM Identifier**   Optional, not repeatable, two octets consisting of a binary number.

The DataSet identifies the Abstract Relationship Method (ARM) which is described in a document registered by the originator of the ARM with the IPTC and NAA.

In Record 6, DataSets 6:192 through 6:255 are allocated for the purposes of the ARM.

Details of the originator and a brief description of the ARM are contained in Appendix F.

1:122   **ARM Version**   Mandatory if DataSet 1:120 is used, not repeatable, two octets consisting of a binary number representing the particular version of the ARM specified in DataSet 1:120. A list of ARM Identifiers, including version cross references, is included as Appendix F.

Chapter 6.   APPLICATION RECORD

Section 1.1   Functionality

Part II provides details of an application record to provide pertinent editorial information about the object as described in Part I.

Section 1.2   Implementation Guidelines

Implementation guidelines as described in Part I apply to Part II as well.

Section 1.3   Uniqueness

Use of Record No. 2 shall only be as described in this section. Any changes in DataSets will be by international concurrence.

Section 1.4   Application Record No. 2

All Record No. 2 DataSets herein described are **optional**, but if any are used DataSet 2:00 is mandatory. Some registered File Formats may require the mandatory use of some Record No. 2 DataSets.

2:00	**Record Version**	Mandatory, not repeatable, two octets.
		A binary number identifying the version of the Information Interchange Model, Part II (Record 2:xx), utilised by the provider. Version numbers are assigned by IPTC and NAA.
		The version number of this record is four (4).

2:03   Object Type   Not repeatable, 3-67 octets, consisting of 2 numeric characters
Reference   followed by a colon and an optional text part of up to 64 octets.

The Object Type is used to distinguish between different types of objects within the IIM.

The first part is a number representing a language independent international reference to an Object Type followed by a colon separator.
The second part, if used, is a text representation of the Object Type Number (maximum 64 octets) consisting of graphic characters plus spaces either in English, as defined in Appendix G, or in the language of the service as indicated in DataSet 2:135

A list of Object Type Numbers and Names and their corresponding definitions will be maintained by the IPTC. See Appendix G.

Object Type Reference		
Object Type Number	ES	Object Type Name
Two Octets assigned by the IPTC as in Appendix G	:	0 - 64 Octets for name associated to the number (if used) as allocated by the IPTC or as translated by the provider in the language of the object.
2	1	0 - 64
Minimum of 3, maximum of 67		

2:04	**Object Attribute Reference**	Repeatable, 4-68 octets, consisting of 3 numeric characters followed by a colon and an optional text part of up to 64 octets.

The Object Attribute defines the nature of the object independent of the Subject.

The first part is a number representing a language independent international reference to an Object Attribute followed by a colon separator.
The second part, if used, is a text representation of the Object Attribute Number (maximum 64 octets) consisting of graphic characters plus spaces either in English, as defined in Appendix G, or in the language of the service as indicated in DataSet 2:135

A registry of Object Attribute Numbers and Names and their corresponding definitions (if available) will be maintained by the IPTC in different languages, with translations as supplied by members. See Appendix G.

Object Attribute Reference		
Object Attribute Number	ES	Object Attribute Name
Three Octets assigned by the IPTC as in Appendix G	:	0 - 64 Octets for name associated to the number (if used) as allocated by the IPTC or as translated by the provider in the language of the object.
3	1	0 - 64
Minimum of 4, maximum of 68		

2:05	**Object Name**	Not repeatable, maximum 64 octets, consisting of graphic characters plus spaces.

Used as a shorthand reference for the object. Changes to existing data, such as updated stories or new crops on photos, should be identified in Edit Status.

Examples:
> "Wall St."
> "Ferry Sinks"

2:07 **Edit Status** Not repeatable. Maximum 64 octets, consisting of graphic characters plus spaces.

Status of the objectdata, according to the practice of the provider.

Examples:
"Lead"
"CORRECTION"

2:08 **Editorial Update** Not repeatable, 2 octets, consisting of numeric characters. Indicates the type of update that this object provides to a previous object. The link to the previous object is made using the ARM (DataSets 1:120 and 1:122), according to the practices of the provider.

Possible values:

01 Additional language. Signifies that the accompanying Record 2 DataSets repeat information from another object in a different natural language (as indicated by DataSet 2:135).

2:10 **Urgency** Not repeatable, one octet, consisting of a numeric character.

Specifies the editorial urgency of content and not necessarily the envelope handling priority (see 1:60, Envelope Priority). The '1' is most urgent, '5' normal and '8' denotes the least-urgent copy. The numerals '9' and '0' are reserved for future use.

2:12 Subject Reference   Repeatable. Minimum of 13 and maximum of 236 octets consisting of graphic characters. Colon ':' is only allowed as specified, the asterisk '*' and question mark '?' are not allowed, nor are the octet values 42 and 63.

The character encoding used for this dataset must encode the colon ':' using octet value 58, and must not use this octet value for any other purpose.

The Subject Reference is a structured definition of the subject matter. It must contain an IPR (default value is "IPTC"), an 8 digit Subject Reference Number and an optional Subject Name, Subject Matter Name and Subject Detail Name. Each part of the Subject reference is separated by a colon (:). The Subject Reference Number contains three parts, a 2 digit Subject Number, a 3 digit Subject Matter Number and a 3 digit Subject Detail Number thus providing unique identification of the object's subject.
If the Subject Matter or Subject Detail is not defined then a value of 000 is used for the Subject Matter Number and/or Subject Detail Number as appropriate. (See Appendices H and I).
The DataSet may be repeated when the objectdata content is relevant to several subjects of news interest. It can be independent of provider and for any media form. The provider must either use the IPTC scheme or one that has been defined and published by the provider.

The construction of the Subject Reference is as follows:

- **Information Provider Reference (IPR)**
  A name, registered with the IPTC/NAA, identifying the provider that provides an indicator of the SDR content. The default value for the IPR is "IPTC" and is mandatory if the Subject Reference exists in the IPTC coding scheme as displayed in Appendices H - J.

Individual registered Information Providers may at their discretion extend the Subject Reference lists. However, they may only add to the subject matter and/or subject detail included in the IPTC lists, and must identify this by using their registered IPR.The IPTC Subject list may not be extended.

- **Subject Reference Number**
  Provides a numeric code to indicate the Subject Name

plus optional Subject Matter and Subject Detail Names in the language of the service. Subject Reference Numbers consist of 8 octets in the range 01000000 to 17999999 and represent a language independent international reference to a Subject. A Subject is identified by its Reference Number and corresponding Names taken from a standard lists given in Appendix H,I &J.These lists are the English language reference versions.

- **Subject Name**

   The third part, if used, is a text representation of the Subject Number (maximum 64 octets) consisting of graphic characters plus spaces either in English, as defined in Appendix H, or in the language of the service as indicated in DataSet 2:135

   The Subject identifies the general content of the objectdata as determined by the provider.

- **Subject Matter Name**

   The fourth part, if used, is a text representation of the Subject Matter Number (maximum 64 octets) consisting of graphic characters plus spaces either in English, as defined in Appendix I, or in the language of the service as indicated in DataSet 2:135

   A Subject Matter further refines the Subject of a News Object.

- **Subject Detail Name**

   The fifth part, if used, is a text representation of the Subject Detail Number (maximum 64 octets) consisting of graphic characters plus spaces either in English, as defined in Appendix J, or in the language of the service as indicated in DataSet 2:135

A Subject Detail further refines the Subject Matter of a News Object. A registry of Subject Reference Numbers, Subject Matter Names and Subject Detail Names, descriptions (if available) and their corresponding parent Subjects will be held by the IPTC in different languages, with translations as supplied by members. See Appendices I and J.

| Subject Reference (SR) | | | | | | | | |
| Minimum of 13 and maximum of 236 Octets | | | | | | | | |
IPR	ES	Subject Reference Number	ES	Subject Name	ES	Subject Matter Name	ES	Subject Detail Name
1 - 32 Octets registered with IPTC for UNO	:	Eight octets assigned by the IPTC as contained in Appendices H,I & J	:	Maximum 64 octets to reference the Subject	:	Maximum 64 octets to reference the Subject Matter	:	Maximum 64 octets to reference the Subject Detail
Minimum 1, maximum of 32	*1*	*8*	*1*	*0-64 Octets*	*1*	*0-64 Octets*	*1*	*0-64 Octets*

2:15 Category Not repeatable, maximum three octets, consisting of alphabetic characters.

Identifies the subject of the objectdata in the opinion of the provider.

A list of categories will be maintained by a regional registry, where available, otherwise by the provider.

Note: Use of this DataSet is Deprecated. It is likely that this DataSet will not be included in further versions of the IIM.

2:20 Supplemental Category Repeatable, maximum 32 octets, consisting of graphic characters plus spaces.

Supplemental categories further refine the subject of an objectdata. Only a single supplemental category may be contained in each DataSet. A supplemental category may include any of the recognised categories as used in 2:15. Otherwise, selection of supplemental categories are left to the provider.

Examples:
    "NHL" (National Hockey League)
    "Fußball"

Note: Use of this DataSet is Deprecated. It is likely that this DataSet will not be included in further versions of the IIM.

2:22	**Fixture Identifier**	Not repeatable, maximum 32 octets, consisting of graphic characters.

Identifies objectdata that recurs often and predictably. Enables users to immediately find or recall such an object.

Example:
    "EUROWEATHER"

2:25	**Keywords**	Repeatable, maximum 64 octets, consisting of graphic characters plus spaces.

Used to indicate specific information retrieval words.

Each keyword uses a single Keywords DataSet. Multiple keywords use multiple Keywords DataSets.

It is expected that a provider of various types of data that are related in subject matter uses the same keyword, enabling the receiving system or subsystems to search across all types of data for related material.

Examples:
    "GRAND PRIX"
    "AUTO"

2:26	**Content Location Code**	Repeatable, 3 octets consisting of alphabetic characters. Indicates the code of a country/geographical location referenced by the content of the object. Where ISO has established an appropriate country code under ISO 3166, that code will be used. When ISO3166 does not adequately provide for identification of a location or a country, e.g. ships at sea, space, IPTC will assign an appropriate three-character code under the provisions of ISO3166 to avoid conflicts. (see Appendix D) . If used in the same object with DataSet 2:27, must immediately precede and correspond to it.
2:27	**Content Location Name**	Repeatable, maximum 64 octets, consisting of graphic characters plus spaces. Provides a full, publishable name of a country/geographical location referenced by the content of the object, according to guidelines of the provider. If used in the same object with DataSet 2:26, must immediately follow and correspond to it.

IPTC-NAA Information Interchange Model Version No. 4   **Page 32**

October 1997

Note: The intention is that DataSets 2:26 and 2:27 can occur either as repeatable codes, repeatable names or in code/name pairs. Mixed presentation is not allowed in one object.

2:30	**Release Date**	Not repeatable, eight octets, consisting of numeric characters.

Designates in the form CCYYMMDD the earliest date the provider intends the object to be used. Follows ISO 8601 standard.

Example:
"19890317" indicates data for release on 17 March 1989.

2:35	**Release Time**	Not repeatable, 11 octets, consisting of graphic characters.

Designates in the form HHMMSS±HHMM the earliest time the provider intends the object to be used. Follows ISO 8601 standard.

Example:
"090000-0500" indicates object for use after 0900 in New York (five hours behind UTC)

2:37	**Expiration Date**	Not repeatable, eight octets, consisting of numeric characters.

Designates in the form CCYYMMDD the latest date the provider or owner intends the objectdata to be used. Follows ISO 8601 standard.

Example:
"19940317" indicates an objectdata that should not be used after 17 March 1994.

2:38	**Expiration Time**	Not repeatable, 11 octets, consisting of graphic characters.

Designates in the form HHMMSS±HHMM the latest time the provider or owner intends the objectdata to be used. Follows ISO 8601 standard.

Example:

"090000-0500" indicates an objectdata that should not be used after 0900 in New York (five hours behind

UTC).

Expiration date and time have uses beyond audio data. Weather forecasts, for example, typically carry expiration dates and times.

2:40   **Special**   Not repeatable, maximum 256 octets, consisting of graphic
          Instructions   characters plus spaces.

Other editorial instructions concerning the use of the objectdata, such as embargoes and warnings.

Examples:
"SECOND OF FOUR STORIES"
"3 Pictures follow"
"Argentina OUT"

2:42   **Action**   Not repeatable, 2 octets, consisting of numeric characters.
          Advised   Indicates the type of action that this object provides to a previous object. The link to the previous object is made using the ARM (DataSets 1:120 and 1:122), according to the practices of the provider.

Possible values:

01   Object Kill. Signifies that the provider wishes the holder of a copy of the referenced object make no further use of that information and take steps to prevent further distribution thereof. Implies that any use of the object might result in embarrassment or other exposure of the provider and/or recipient.

02   Object Replace. Signifies that the provider wants to replace the referenced object with the object provided under the current envelope.

03   Object Append. Signifies that the provider wants to append to the referenced object information provided in the objectdata of the current envelope.

Note:

The following DataSets 2:45, 2:47 and 2:50, when repeated, will be repeated together, i.e. in sequential triplets.

2:45	**Reference Service**	Optional, repeatable, format identical with 1:30.

Identifies the Service Identifier of a prior envelope to which the current object refers.

Must be followed by 2:47 and 2:50 with repetition occurring in sequential triplets. Used together, 2:45, 2:47 and 2:50 indicate that the current object refers to the content of a prior envelope.

2:47	**Reference Date**	Mandatory if 2:45 exists and otherwise not allowed. Repeatable, format identical with 1:70

Identifies the date of a prior envelope to which the current object refers.

2:50	**Reference Number**	Mandatory if 2:45 exists and otherwise not allowed. Repeatable, format identical with 1:40.

Identifies the Envelope Number of a prior envelope to which the current object refers.

2:55	**Date Created**	Not repeatable, eight octets, consisting of numeric characters.

Represented in the form CCYYMMDD to designate the date the intellectual content of the objectdata was created rather than the date of the creation of the physical representation. Follows ISO 8601 standard. Where the month or day cannot be determined, the information will be represented by "00". Where the year cannot be determined, the information for century and year will be represented by "00".
Thus a photo taken during the American Civil War would carry a creation date during that epoch (1861-1865) rather than the date the photo was digitised for archiving.

Example:
"19900127" indicates the intellectual content created on 27th January 1990.

2:60	**Time Created**	Not repeatable, 11 octets, consisting of graphic characters.

Represented in the form HHMMSS±HHMM to designate the time the intellectual content of the objectdata current source material was created rather than the creation of the physical representation. Follows ISO 8601 standard.

Where the time cannot be precisely determined, the closest approximation should be used.

Example:
> "133015+0100" indicates that the object intellectual content was created at 1:30 p.m. and 15 seconds Frankfurt time, one hour ahead of UTC.

2:62	**Digital Creation Date**	Not repeatable, eight octets, consisting of numeric characters.

Represented in the form CCYYMMDD to designate the date the digital representation of the objectdata was created. Follows ISO 8601 standard. Thus a photo taken during the American Civil War would carry a Digital Creation Date within the past several years rather than the date where the image was captured on film, glass plate or other substrate during that epoch (1861-1865).

Example:
> "19900127" indicates digital form of the objectdata was created on 27th January 1990.

2:63	**Digital Creation Time**	Not repeatable, 11 octets, consisting of graphic characters.

Represented in the form HHMMSS±HHMM to designate the time the digital representation of the objectdata was created. Follows ISO 8601 standard.
Example:
> "133015+0100" indicates that the digital form of the objectdata was created at 1:30 p.m. and 15 seconds Frankfurt time, one hour ahead of UTC.

NOTE: DataSets 2:65 and 2:70 are to form an advisory to the user and are not "computer" fields. Programmers should not expect to find computer-readable information in these DataSets.

2:65	**Originating Program**	Not repeatable, maximum of 32 octets, consisting of graphic characters plus spaces.

Identifies the type of program used to originate the objectdata.

Examples:
"Word Perfect"
"SCITEX"
"MacDraw"

2:70	**Program Version**	Not repeatable, maximum of 10 octets, consisting of graphic characters plus spaces.

Used to identify the version of the program mentioned in 2:65. DataSet 2:70 is invalid if 2:65 is not present.

2:75	**Object Cycle**	Not repeatable, one octet, consisting of an alphabetic character.

Where:
 'a' = morning
 'p' = evening
 'b' = both

Virtually only used in North America.

2:80	**By-line**	Repeatable, maximum 32 octets, consisting of graphic characters plus spaces.

Contains name of the creator of the objectdata, e.g. writer, photographer or graphic artist.

Examples:
"Robert Capa"
"Ernest Hemingway"
"Pablo Picasso"

2:85	**By-line Title**	Repeatable, maximum 32 octets, consisting of graphic characters plus spaces.

A by-line title is the title of the creator or creators of an objectdata. Where used, a by-line title should follow the by-line it modifies.

Examples:
    "Staff Photographer"
    "Corresponsal"
    "Envoyé Spécial"

2:90   City   Not repeatable, maximum 32 octets, consisting of graphic characters plus spaces.

Identifies city of objectdata origin according to guidelines established by the provider.
Examples:
    "Zürich"
    "Milano"
    "New York"

2:92   Sub-location   Not repeatable, maximum 32 octets, consisting of graphic characters plus spaces.

Identifies the location within a city from which the objectdata originates, according to guidelines established by the provider.

Examples:
    "Capitol Hill"
    "Maple Leaf Gardens"
    "Strandgateparken"

Note: The location used as a dateline for audio reports often refers not to a city, but a place within a city, such as "Strandgateparken."

2:95   Province/State   Not repeatable, maximum 32 octets, consisting of graphic characters plus spaces.

Identifies Province/State of origin according to guidelines established by the provider.

Examples:
    "WA"
    "Sussex"
    "Baden-Württenberg"

2:100 Country/ Primary Location Code

Not repeatable, three octets consisting of alphabetic characters.

Indicates the code of the country/primary location where the intellectual property of the objectdata was created, e.g. a photo was taken, an event occurred.

Where ISO has established an appropriate country code under ISO 3166, that code will be used. When ISO3166 does not adequately provide for identification of a location or a new country, e.g. ships at sea, space, IPTC will assign an appropriate three-character code under the provisions of ISO3166 to avoid conflicts. (see Appendix D)

Examples:
        "USA" (United States)
        "FRA" (France)
        "XUN" (United Nations)

2:101 Country/ Primary Location Name

Not repeatable, maximum 64 octets, consisting of graphic characters plus spaces.

Provides full, publishable, name of the country/primary location where the intellectual property of the objectdata was created, according to guidelines of the provider.

2:103 Original Transmis- sion Reference

Not repeatable. Maximum 32 octets, consisting of graphic characters plus spaces.

A code representing the location of original transmission according to practices of the provider.

Examples:
   BER-5
        PAR-12-11-01

2:105   Headline   Not repeatable, maximum of 256 octets, consisting of graphic characters plus spaces.

A publishable entry providing a synopsis of the contents of the objectdata.

Example:
"Lindbergh Lands In Paris"

2:110   Credit   Not repeatable, maximum of 32 octets, consisting of graphic characters plus spaces.

Identifies the provider of the objectdata, not necessarily the owner/creator.

2:115   Source   Not repeatable, maximum of 32 octets, consisting of graphic characters plus spaces.

Identifies the original owner of the intellectual content of the objectdata. This could be an agency, a member of an agency or an individual.

2:116   Copyright   Not repeatable, maximum of 128 octets, consisting of graphic
          Notice   characters plus spaces.

Contains any necessary copyright notice.

2:118   Contact   Repeatable, maximum of 128 octets, consisting of graphic characters plus spaces.

Identifies the person or organisation which can provide further background information on the objectdata.

2:120   Caption/   Not repeatable, maximum of 2000 octets, consisting of graphic
          Abstract   characters plus carriage-returns, linefeeds and spaces.

A textual description of the objectdata, particularly used where the object is not text.

2:122 **Writer/** Repeatable, maximum 32 octets, consisting of graphic char-
Editor acters plus spaces.

Identification of the name of the person involved in the writing,
editing or correcting the objectdata or caption/abstract.

2:125 **Rasterized** Not repeatable, 7360 octets, consisting of binary data, one bit
Caption per pixel, two value bitmap where 1 (one) represents black and
0 (zero) represents white.

Image width 460 pixels and image height 128 pixels.
Scanning direction bottom to top, left to right.
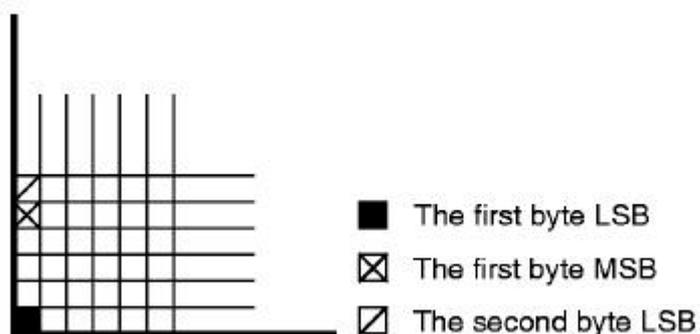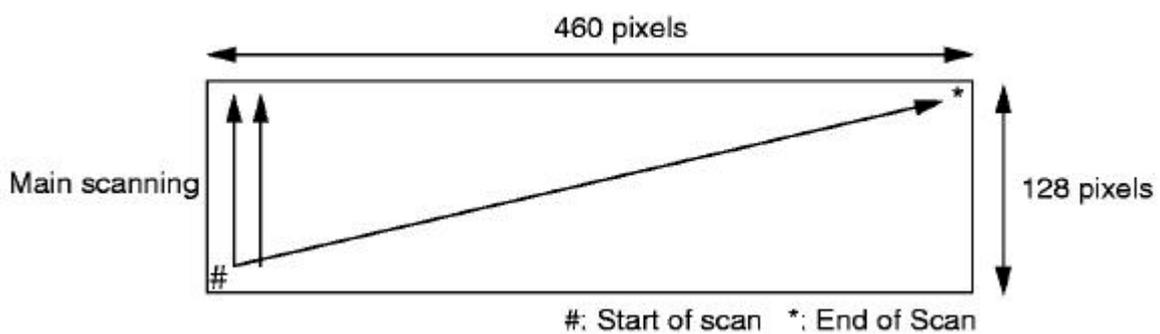
Contains the rasterized objectdata description and is used
where characters that have not been coded are required for
the caption.

2:130 **Image Type** Not repeatable. Two octets. The first octet is a numeric
character and the second is an alphabetic character.

The numeric characters 1 to 4 indicate the number of
components in an image, in single or multiple envelopes.

The numeric character 0 indicates Record 2 caption for a
specific image.

IPTC-NAA Information Interchange Model Version No. 4   **Page 41**

The numeric character 9 specifies that the objectdata contains supplementary data to an image (as defined in the Digital Newsphoto Parameter Record DataSet 3:55).

Possible values:
Octet 1:

'0' = No objectdata.
If this option is chosen, DataSet 8:10 of the objectdata Record will be present (mandatory), but will be empty, i.e. a count of zero octets.

'1' = Single component, e.g. black and white or one component of a colour project.

'2', '3', '4' = Multiple components for a colour project.

'9' = Supplemental objects related to other objectdata

Other values are reserved for future use.

The alphabetic character will indicate the exact content of the current objectdata in terms of colour composition.

Possible values:
Octet 2:

'W'   = Monochrome.
'Y'   = Yellow component.
'M'   = Magenta component.
'C'   = Cyan component.
'K'   = Black component.
'R'   = Red component.
'G'   = Green component.
'B'   = Blue component.
'T'   = Text only.
'F'   = Full colour composite, frame sequential.
'L'   = Full colour composite, line sequential.
'P'   = Full colour composite, pixel sequential.
'S'   = Full colour composite, special interleaving.

Other values are reserved for future use.

Note: When '0' or 'T' are used, the only authorised combination is: "0T"

2:131 **Image Orientation**   Not repeatable, one octet, consisting of an alphabetic character. Allowed values are P (for Portrait), L (for Landscape) and S (for Square).

Indicates the layout of the image area.

2:135 **Language Identifier**   Not repeatable, two or three octets, consisting of alphabetic characters.

Describes the major national language of the object, according to the 2-letter codes of ISO 639:1988. Does not define or imply any coded character set, but is used for internal routing, e.g. to various editorial desks.

Implementation note: Programmers should provide for three octets for Language Identifier because the ISO is expected to provide for 3-letter codes in the future.

2:150 **Audio Type**   Not repeatable. Two octets. The first octet is a numeric character, while the second is an alphabetic character.

Octet 1 represents the number of channels. Possible values:

'0' = no objectdata
If this option is chosen, DataSet 8:10 of the ObjectData Record will be present (It is mandatory.), but will be empty, i.e. a count of zero octets.

'1' = monaural (1 channel) audio
'2'= stereo (2 channel) audio

Other values are reserved for future use.

Octet 2 indicates the exact type of audio contained in the current objectdata.

Possible values:

'A' = Actuality
'C' = Question and answer session
'M'= Music, transmitted by itself
'Q' = Response to a question
'R' = Raw sound

'S' = Scener
'T' = Text only
'V' = Voicer
'W' = Wrap

Other values are reserved for future use.

Examples:
"lV" for a mono voicer
"2M" for music recorded in stereo

Note: When '0' or 'T' is used, the only authorised combination is "0T". This is the mechanism for sending a caption either to supplement an audio cut sent previously without a caption or to correct a previously sent caption.

2:151	**Audio Sampling Rate**	Not repeatable. Six octets with leading zero(s), consisting of Sampling rate numeric characters, representing the sampling rate in hertz (Hz).

Examples:
"011025" for a sample rate of 11025 Hz
"022050" for a sample rate of 22050 Hz
"044100" for a sample rate of 44100 Hz

2:152	**Audio Sampling Resolution**	Not repeatable. Two octets with leading zero(s), consisting of resolution numeric characters representing the number of bits in each audio sample.

Examples:
"08" for a sample size of 8 bits
"16" for a sample size of 16 bits
"20" for a sample size of 20 bits

2:153	**Audio Duration**	Not repeatable. Six octets, consisting of numeric characters. Designates in the form HHMMSS the running time of an audio objectdata when played back at the speed at which it was recorded.

Example:
"000105" for a cut lasting one minute, five seconds

| 2:154 | **Audio Outcue** | Not repeatable, maximum 64 octets, consisting of graphic characters plus spaces. |

Identifies the content of the end of an audio objectdata, according to guidelines established by the provider.

Examples:
> "... better as a team"
> "fades"
> "...Jean Krause Paris"

The outcue generally consists of the final words spoken within an audio objectdata or the final sounds heard.

| 2:200 | **ObjectData Preview File Format** | Mandatory if DataSet 2:202 exists; not repeatable, two octets. |

A binary number representing the file format of the ObjectData Preview. The file format must be registered with IPTC or NAA with a unique number assigned to it.

The values allowed are taken from the approved list of file formats registered for DataSet 1:20 and presented in Appendix A.

| 2:201 | **ObjectData Preview File Format Version** | Mandatory if DataSet 2:202 exists; not repeatable, two octets. |

A binary number representing the particular version of the ObjectData Preview File Format specified in 2:200

The File Format Version is taken from the list included in Appendix A for DataSet 1:20 and 1:22.

| 2:202 | **ObjectData Preview Data** | Optional, not repeatable; maximum size of 256000 octets consisting of binary data. |

Chapter 11.   PRE-OBJECTDATA DESCRIPTOR RECORD

7:10   Size Mode   Mandatory, not repeatable, one octet.

The octet is set to the binary value of '0' if the size of the objectdata is not known and is set to '1' if the size of the objectdata is known at the beginning of transfer.

7:20   Max Subfile Size   Mandatory, not repeatable.

A binary number indicating the maximum size for the following Subfile DataSet(s).

The largest number is not defined, but programmers should provide at least for the largest binary number contained in four octets taken together. If the entire object is to be transferred together within a single DataSet 8:10, the number equals the size of the object.

7:90   ObjectData Size Announced   Mandatory if DataSet 7:10 has value '1' and not allowed if DataSet 7:10 has value '0'. Not repeatable.

A binary number representing the overall size of the objectdata, expressed in octets, not including tags, if that size is known when transfer commences.

7:95   Maximum ObjectData Size   Optional, not repeatable.

A binary number used when objectdata size is not known, indicating the largest size, expressed in octets, that the objectdata can possibly have, not including tags.

Chapter 12.   OBJECTDATA RECORD NUMBER 8

8:10   **Subfile**   Mandatory, repeatable.

Subfile DataSet containing the objectdata itself. Subfiles must be sequential so that the subfiles may be reassembled.

Chapter 13.   POST-OBJECTDATA DESCRIPTOR RECORD NUMBER 9

9:10   **Confirmed ObjectData Size**   Mandatory, not repeatable.

A binary number.

Total size of the objectdata, in octets, without tags. This number should equal the number in DataSet 7:90 if the size of the objectdata is known and has been provided.

APPENDIX A

FILE FORMATS (DataSet 1:20)

The following File Formats have been registered by the NAA and IPTC:

	Ident No:	Description:
	00	No ObjectData
	01	IPTC-NAA Digital Newsphoto Parameter Record
	02	IPTC7901 Recommended Message Format
¤	03	Tagged Image File Format (Adobe/Aldus Image data)
	04	Illustrator (Adobe Graphics data)
	05	AppleSingle (Apple Computer Inc)
	06	NAA 89-3 (ANPA 1312)
	07	MacBinary II
	08	IPTC Unstructured Character Oriented File Format (UCOFF)
	09	United Press International ANPA 1312 variant
	10	United Press International Down-Load Message
¤	11	JPEG File Interchange (JFIF)
	12	Photo-CD Image-Pac (Eastman Kodak)
¤	13	Microsoft Bit Mapped Graphics File [*.BMP]
	14	Digital Audio File [*.WAV] (Microsoft & Creative Labs)
	15	Audio plus Moving Video [*.AVI] (Microsoft)
	16	PC DOS/Windows Executable Files [*.COM][*.EXE]
	17	Compressed Binary File [*.ZIP] (PKWare Inc)
	18	Audio Interchange File Format AIFF (Apple Computer Inc)
	19	RIFF Wave (Microsoft Corporation)
	20	Freehand (Macromedia/Aldus)
	21	Hypertext Markup Language "HTML" (The Internet Society)
	22	MPEG 2 Audio Layer 2 (Musicom), ISO/IEC
	23	MPEG 2 Audio Layer 3, ISO/IEC
	24	Portable Document File (*.PDF) Adobe
	25	News Industry Text Format (NITF)
	26	Tape Archive (*.TAR)
	27	Tidningarnas Telegrambyrå NITF version (TTNITF DTD)
	28	Ritzaus Bureau NITF version (RBNITF DTD)

NOTES: ¤ Recommended for image ObjectData Preview (DataSet 2:200).
Other file formats may also be registered with IPTC and NAA and not listed here pending issue of a document revision. Contact IPTC or NAA for update information.

FILE VERSIONS [DataSet 1:22]

The following cross reference is specified for the file format versions registered by the NAA and IPTC:

Ident No (1:20)	Version	Version No (1:22)
00	1	00
01	1	01
01	2	02
01	3	03
01	4	04
02	4	04
03	5.0	01
03	6.0	02
04	1.40	01
05	2	01
06	1	01
11	1.02	01
20	3.1	01
20	4.0	02
20	5.0	03
20	5.5	04
21	2.0	02

APPENDIX B

ADDRESSES OF ORGANISATIONS MENTIONED

Newspaper Association of America (formerly American Newspaper Publishers Association)
The Newspaper Center
1921 Gallows Road
Suite 600
Vienna
VA 22182-3900
USA
Telephone   +1 (1)703 902 1600
Telefax   +1 (1)703 902 1842

Director Telecommunications Standardization Sector
International Telecommunications Union
Place des Nations
CH-1211 Geneva 20
SWITZERLAND
Telephone   +41 (0)22 730 51 11
Telefax   +41 (0)22 733 72 56

International Organization For Standardization
1, rue de Varembé
Case postale 56
CH-1211 Geneva 20
SWITZERLAND
Telephone   +41 (0)22 749 01 11
Telefax   +41 (0)22 733 34 30

International Press Telecommunications Council
Sheet Street
Windsor
Berks SL4 1BE
UNITED KINGDOM
Telephone: +44 (0)1753 705051
Telefax   +44 (0)1753 831541
Email   m_director_iptc@dial.pipex.com

APPENDIX C

The IPTC-NAA Code Library

ECMA as the ISO Registration Authority for escape sequences maintains the International Register of Coded Character Sets to be used with escape sequences, a register of Codes and allocated standardised escape sequences, which are recognised by IPTC-NAA without further approval procedure. The registration procedure is defined in ISO 2375. IPTC-NAA maintain a Register of Codes and allocated private escape sequences, which are shown in paragraph 1.2. IPTC may, as Sponsoring Authority, submit such private sequence Codes for approval as standardised sequence Codes. The registers consist of a Graphic repertoire, a Control function repertoire and a Repertoire of other coding systems (e.g. complete Codes). Together they represent the IPTC-NAA Code Library.

1 The International Register of Coded Character Sets to be used with escape sequences

The most used Codes contained in the Register are:

Reg. No.	Name	Final Character

Graphic Repertoire

94-character sets (intermediate character 2/8 to 2/11):

002	ISO 646 IRV	4/0
004	ISO 646 British Version	4/1
006	ISO 646 USA Version (ASCII)	4/2
008-1	NATS Primary Set for Finland and Sweden	4/3
008-2	NATS Secondary Set for Finland and Sweden	4/4
009-1	NATS Primary Set for Denmark and Norway	4/5
009-2	NATS Secondary Set for Denmark and Norway	4/6
010	ISO 646 Swedish Version (SEN 850200)	4/7
015	ISO 646 Italian Version (ECMA)	5/9
016	ISO 646 Portuguese Version (ECMA Olivetti)	4/12
017	ISO 646 Spanish Version (ECMA Olivetti)	5/10
018	ISO 646 Greek Version (ECMA)	5/11

021	ISO 646 German Version (DIN 66003)	4/11
037	Basic Cyrillic Character Set (ISO 5427)	4/14
060	ISO 646 Norwegian Version (NS 4551)	6/0
069	ISO 646 French Version (NF Z 62010-1982)	6/6
084	ISO 646 Portuguese Version (ECMA IBM)	6/7
085	ISO 646 Spanish Version (ECMA IBM)	6/8
086	ISO 646 Hungarian Version (HS 7795/3)	6/9
121	Alternate Primary Graphic Set No. 1 (Canada CSA Z 243.4-1985)	7/7
122	Alternate Primary Graphic Set No. 2 (Canada CSA Z 243.4-1985)	7/8

96-character sets (intermediate character 2/12 to 2/15):

100	Right-hand Part of Latin Alphabet No. 1 (ISO 8859-1)	4/1
101	Right-hand Part of Latin Alphabet No. 2 (ISO 8859-2)	4/2
109	Right-hand Part of Latin Alphabet No. 3 (ISO 8859-3)	4/3
110	Right-hand Part of Latin Alphabet No. 4 (ISO 8859-4)	4/4
111	Right-hand Part of Latin/Cyrillic Alphabet (ISO 8859-5)	4/0
125	Right-hand Part of Latin/Greek Alphabet (ISO 8859-7)	4/6
127	Right-hand Part of Latin/Arabic Alphabet (ISO 8859-6)	4/7
138	Right-hand Part of Latin/Hebrew Alphabet (ISO 8859-8)	4/8
139	Right-hand Part of Czechoslovak Standard (CSN 369103)	4/9

Multiple-Byte Graphic Character Sets (1st intermediate character 2/4, 2nd intermediate character 2/8 to 2/11)

| 87 | Japanese characters   (JIS X 0208-1983) | 4/2 |

Control Function Repertoire

C0 Control Function Sets (intermediate character 2/1):

001	C0 Set of ISO 646	4/0
026	IPTC C0 Set for newspaper text transmission	4/3
036	C0 Set of ISO 646 with SS2 instead of IS4	4/4
104	Minimum C0 Set for ISO 4873	4/7

C1 Control Function Sets (intermediate character 2/2):

| 077 | C1 Control Set of ISO 6429 | 4/3 |
| 105 | Minimum C1 Set for ISO 4873 | 4/7 |

Single Additional Control Functions:

062	Locking-Shift Two (LS2), ISO 2022	6/14
063	Locking-Shift Three (LS3), ISO 2022	6/15
064	Locking-Shift Three Right (LS3R), ISO 2022	7/12
065	Locking-Shift Two Right (LS2R), ISO 2022	7/13
066	Locking-Shift One Right (LS1R), ISO 2022	7/14

Repertoire of Other Coding Systems (e.g. complete Codes, intermediate character 2/5)

| 196 | UCS Transformation Format (UTF-8) | 4/7 |

2. The IPTC-NAA Register of Codes

Further details of the Codes and the IPTC-NAA Register of Codes sponsored by IPTC can be obtained from IPTC or NAA.

APPENDIX D

The IPTC-NAA Country Codes

In consultation with DIN, the country code management agency for ISO, IPTC has identified the following codes for use by News Organisations.

ISO assigned

URY - Uruguay (omitted from former list)

ATA - Antarctica (a previously recognised code that was not on the list)

The following new codes are not supported by ISO, but follow the ISO guidelines for industry use of codes where no formal designation exists:

XUN - United Nations

XEU - European Union (formerly known as the EC and before that the EEC)

XSP - SPace

XSE - at SEa

XIF - In Flight

XEN - ENgland (where greater granularity than Great Britain is desired)

XSC - SCotland

XNI - Northern Ireland

XWA - WAles.

ISO has reserved the following codes for the indicated areas.

PSE - Palestine

GZA - Gaza

JRO - Jericho

APPENDIX E

INFORMATION PROVIDERS REFERENCE

(DataSet 1:100)

The following IPR have been registered by the NAA and IPTC:

I P Reference: **Information Provider:**

AFP   Agence France Presse
AP   Associated Press
APD   Associated Press
APE   Associated Press
APF   Associated Press
APS   Associated Press
BN   Canadian Press
CP   Canadian Press
CTK   Czech News Agency
dpa   Deutsche Presse-Agentur GmbH
HNA   Croatian News Agency
IPTC   International Press Telecommunications Council
MTI   Magyar Távirati Iroda / Hungarian News Agency
PC   Canadian Press
PN   Canadian Press
REUTERS   Reuters
TT   Tidningarnas Telegrambyrå
UP   United Press International
UPI   United Press International

APPENDIX F

ABSTRACT RELATIONSHIP METHOD IDENTIFIERS

(DataSets 1:120 and 1:122)

1:120	1:122	Descriptive Name
01	01	IPTC Method 1 (Using DataSets 2:45, 2:47 and 2:50)
02	01	IPTC Method 2 (Using DataSet 1:100)

APPENDIX G

OBJECT TYPE NUMBER AND OBJECT TYPE NAME RELATIONSHIP

Object Type Number	Object Type Name
01	News
02	Data [1]
03	Advisory

OBJECT ATTRIBUTE NUMBER AND OBJECT ATTRIBUTE NAME RELATIONSHIP [2]

Object Attribute Number	Object Attribute Name
001	Current
002	Analysis
003	Archive material
004	Background
005	Feature
006	Forecast
007	History
008	Obituary
009	Opinion
010	Polls & Surveys
011	Profile
012	Results Listings & Tables
013	Side bar & Supporting information
014	Summary
015	Transcript & Verbatim

Note 1: Data in this context implies typically non narrative information, usually not eligible for journalistic intervention or modification. It also applies to information routed by the provider from a third party to the user. Examples are sports results, stock prices and agate.

Note 2: Attributes are not restricted in assignment to object types.

APPENDIX H

SUBJECT REFERENCE NUMBER AND SUBJECT NAME RELATIONSHIP

Subject Reference Number	Subject Name	Subject Description
01000000	Arts, Culture & Entertainment	Matters pertaining to the advancement and refinement of the human mind, of interests, skills, tastes and emotions
02000000	Crime, Law & Justice	Establishment and/or statement of the rules of behaviour in society, the enforcement of these rules, breaches of the rules and the punishment of offenders. Organisations and bodies involved in these activities.
03000000	Disasters & Accidents	Man made and natural events resulting in loss of life or injury to living creatures and/or damage to inanimate objects or property.
04000000	Economy, Business & Finance	All matters concerning the planning, production and exchange of wealth.
05000000	Education	All aspects of furthering knowledge of human individuals from birth to death.
06000000	Environmental Issues	All aspects of protection, damage, and condition of the ecosystem of the planet earth and its surroundings.
07000000	Health	All aspects pertaining to the physical and mental welfare of human beings.
08000000	Human Interest	Lighter items about individuals, groups, animals or objects.
09000000	Labour	Social aspects, organisations, rules and conditions affecting the employment of human effort for the generation of wealth or provision of services and the economic support of the unemployed.
10000000	Lifestyle & Leisure	Activities undertaken for pleasure, relaxation or recreation outside paid employment, including eating and travel .
11000000	Politics	Local, regional, national and international exercise of power, or struggle for power, and the relationships between governing bodies and states.
12000000	Religion & Belief	All aspects of human existence involving theology, philosophy, ethics and spiritualty.

13000000	Science & Technology	All aspects pertaining to human understanding of nature and the physical world and the development and application of this knowledge
14000000	Social Issues	Aspects of the behaviour of humans affecting the quality of life.
15000000	Sport	Competitive exercise involving physical effort. Organisations and bodies involved in these activities.
16000000	Unrest, Conflicts & War	Acts of socially or politically motivated protest and/or violence.
17000000	Weather	The study, reporting and prediction of meteorological phenomena.

SUBJECT MATTER NAME AND SUBJECT REFERENCE NUMBER RELATIONSHIP

Subject Name	Subject Reference Number	Subject Matter Name
Arts, Culture & Entertainment	01000000	
	01001000	Archaeology
	01002000	Architecture
	01003000	Bullfighting
	01004000	Carnival
	01005000	Cinema
	01006000	Dance
	01007000	Fashion
	01008000	Language
	01009000	Libraries & Museums
	01010000	Literature
	01011000	Music
	01012000	Painting
	01013000	Photography
	01014000	Radio
	01015000	Sculpture
	01016000	Television
	01017000	Theatre
Crime, Law & Justice	02000000	
	02001000	Crime
	02002000	Judiciary
	02003000	Police
	02004000	Punishment
	02005000	Prison
Disasters & Accidents	03000000	
	03001000	Drought
	03002000	Earthquake
	03003000	Famine
	03004000	Fire
	03005000	Flood

	03006000	Industrial accident
	03007000	Meteorological disaster
	03008000	Nuclear accident
	03009000	Pollution
	03010000	Transport accident
	03011000	Volcanic eruption
Economy, Business & Finance	04000000	
	04001000	Agriculture
	04002000	Chemicals
	04003000	Computing & Information Technology
	04004000	Construction & Property
	04005000	Energy & Resources
	04006000	Financial & Business Services
	04007000	Goods Distribution
	04008000	Macro Economics
	04009000	Markets
	04010000	Media
	04011000	Metal Goods & Engineering
	04012000	Metals & Minerals
	04013000	Process Industries
	04014000	Tourism & Leisure
	04015000	Transport
Education	05000000	
	05001000	Adult Education
	05002000	Further Education
	05003000	Parent Organisations
	05004000	Preschooling
	05005000	Schools
	05006000	Teachers Unions
	05007000	University
Environmental Issues	06000000	
	06001000	Alternative Energy
	06002000	Conservation
	06003000	Energy Savings
	06004000	Environmental Politics
	06005000	Environmental pollution
	06006000	Natural resources
	06007000	Nature
	06008000	Population
	06009000	Waste
	06010000	Water Supplies

Health	07000000	
	07001000	Diseases
	07002000	Epidemic & Plague
	07003000	Health treatment
	07004000	Health organisations
	07005000	Medical research
	07006000	Medical staff
	07007000	Medicines
	07008000	Preventative medicine
Human Interest	08000000	
	08001000	Animals
	08002000	Curiosities
	08003000	People
Labour	09000000	
	09001000	Apprentices
	09002000	Collective contracts
	09003000	Employment
	09004000	Labour dispute
	09005000	Labour legislation
	09006000	Retirement
	09007000	Retraining
	09008000	Strike
	09009000	Unemployment
	09010000	Unions
	09011000	Wages & Pensions
	09012000	Work Relations
Lifestyle & Leisure	10000000	
	10001000	Games
	10002000	Gaming & Lotteries
	10003000	Gastronomy
	10004000	Hobbies
	10005000	Holidays or vacations
	10006000	Tourism
Politics	11000000	
	11001000	Defence
	11002000	Diplomacy
	11003000	Elections
	11004000	Espionage & Intelligence
	11005000	Foreign Aid

	11006000	Government
	11007000	Human Rights
	11008000	Local authorities
	11009000	Parliament
	11010000	Parties
	11011000	Refugees
	11012000	Regional authorities
	11013000	State Budget
	11014000	Treaties & Organisations
Religion & Belief	12000000	
	12001000	Cults & sects
	12002000	Faith
	12003000	Free masonry
	12004000	Religious institutions
Science & Technology	13000000	
	13001000	Applied Sciences
	13002000	Engineering
	13003000	Human Sciences
	13004000	Natural Sciences
	13005000	Philosophical Sciences
	13006000	Research
	13007000	Scientific exploration
	13008000	Space programmes
Social Issues	14000000	
	14001000	Addiction
	14002000	Charity
	14003000	Demographics
	14004000	Disabled
	14005000	Euthanasia
	14006000	Family
	14007000	Family planning
	14008000	Health insurance
	14009000	Homelessness
	14010000	Minority groups
	14011000	Pornography
	14012000	Poverty
	14013000	Prostitution
	14014000	Racism
	14015000	Welfare
Sport	15000000	

15001000	Aero and Aviation Sports
15002000	Alpine Skiing
15003000	American Football
15004000	Archery
15005000	Athletics, Track & Field
15006000	Badminton
15007000	Baseball
15008000	Basketball
15009000	Biathlon
15010000	Billiards, Snooker and Pool
15011000	Bobsleigh
15012000	Bowling
15013000	Bowls & Petanque
15014000	Boxing
15015000	Canoeing & Kayaking
15016000	Climbing
15017000	Cricket
15018000	Curling
15019000	Cycling
15020000	Dancing
15021000	Diving
15022000	Equestrian
15023000	Fencing
15024000	Field Hockey
15025000	Figure Skating
15026000	Freestyle Skiing
15027000	Golf
15028000	Gymnastics
15029000	Handball (Team)
15030000	Horse Racing, Harness Racing
15031000	Ice Hockey
15032000	Jai Alai (Pelota)
15033000	Judo
15034000	Karate
15035000	Lacrosse
15036000	Luge
15037000	Marathon
15038000	Modern Pentathlon
15039000	Motor Racing
15040000	Motor Rallying
15041000	Motorcycling
15042000	Netball
15043000	Nordic Skiing
15044000	Orienteering
15045000	Polo

	15046000	Power Boating
	15047000	Rowing
	15048000	Rugby League
	15049000	Rugby Union
	15050000	Sailing
	15051000	Shooting
	15052000	Ski Jumping
	15053000	Snow Boarding
	15054000	Soccer
	15055000	Softball
	15056000	Speed Skating
	15057000	Speedway
	15058000	Sports Organisations
	15059000	Squash
	15060000	Sumo Wrestling
	15061000	Surfing
	15062000	Swimming
	15063000	Table Tennis
	15064000	Taekwon-Do
	15065000	Tennis
	15066000	Triathlon
	15067000	Volleyball
	15068000	Water Polo
	15069000	Water Skiing
	15070000	Weightlifting
	15071000	Windsurfing
	15072000	Wrestling
Unrest, Conflicts & War	16000000	
	16001000	Acts of terror
	16002000	Armed conflict
	16003000	Civil unrest
	16004000	Coup d'Etat
	16005000	Guerrilla activities
	16006000	Massacre
	16007000	Riots
	16008000	Violent demonstrations
	16009000	War
Weather	17000000	
	17001000	Forecasts
	17002000	Global change
	17003000	Reports
	17004000	Statistics
	17005000	Warnings

October 1997

APPENDIX J

SUBJECT DETAIL NAME AND SUBJECT REFERENCE NUMBER RELATIONSHIP (ECONOMY, BUSINESS & FINANCE)

Subject Matter Name	Subject Reference Number	Subject Detail Name
AGRICULTURE	04001000	
	04001001	Arable Farming
	04001002	Fishing Industry
	04001003	Forestry & Timber
	04001004	Livestock Farming
CHEMICALS	04002000	
	04002001	Biotechnology
	04002002	Fertilisers
	04002003	Health & Beauty products
	04002004	Inorganic chemicals
	04002005	Organic chemicals
	04002006	Pharmaceuticals
	04002007	Synthetics & Plastics
COMPUTING & INFORMATION TECHNOLOGY	04003000	
	04003001	Hardware
	04003002	Networking
	04003003	Satellite technology
	04003004	Semiconductors & active components
	04003005	Software
	04003006	Telecommunications Equipment
	04003007	Telecommunications Services
CONSTRUCTION & PROPERTY	04004000	
	04004001	Heavy construction
	04004002	House building
	04004003	Real Estate

ENERGY & RESOURCES	04005000	
	04005001	Alternative energy
	04005002	Coal
	04005003	Oil & Gas - Downstream activities
	04005004	Oil & Gas - Upstream activities
	04005005	Nuclear power
	04005006	Electricity Production & Distribution
	04005007	Waste Management & Pollution Control
	04005008	Water Supply
FINANCIAL & BUSINESS SERVICES	04006000	
	04006001	Accountancy & Auditing
	04006002	Banking
	04006003	Consultancy Services
	04006004	Employment Agencies
	04006005	Healthcare Providers
	04006006	Insurance
	04006007	Legal services
	04006008	Market research
	04006009	Stock broking
GOODS DISTRIBUTION	04007000	
	04007001	Clothing
	04007002	Department stores
	04007003	Food
	04007004	Mail Order
	04007005	Retail
	04007006	Speciality stores
	04007007	Wholesale
MACRO-ECONOMICS	04008000	
	04008001	Central Banks
	04008002	Consumer Issues
	04008003	Debt Markets
	04008004	Economic Indicators
	04008005	Emerging Markets Debt
	04008006	Foreign Exchange Markets
	04008007	Government Aid
	04008008	Government Debt
	04008009	Interest Rates
	04008010	International Economic Institutions

	04008011	International Trade Issues
	04008012	Loan Markets
MARKETS	04009000	
	04009001	Energy
	04009002	Metals
	04009003	Securities
	04009004	Soft Commodities
MEDIA	04010000	
	04010001	Advertising
	04010002	Books
	04010003	Cinema
	04010004	News Agencies
	04010005	Newspaper & Magazines
	04010006	Online
	04010007	Public Relations
	04010008	Radio
	04010009	Satellite & Cable Services
	04010010	Television
METAL GOODS & ENGINEERING	04011000	
	04011001	Aerospace
	04011002	Automotive Equipment
	04011003	Defence Equipment
	04011004	Electrical Appliances
	04011005	Heavy engineering
	04011006	Industrial components
	04011007	Instrument engineering
	04011008	Shipbuilding
METALS & MINERAL	04012000	
	04012001	Building materials
	04012002	Gold & Precious Materials
	04012003	Iron & Steel
	04012004	Non ferrous metals
PROCESS INDUSTRIES	04013000	
	04013001	Alcoholic Drinks
	04013002	Food
	04013003	Furnishings & Furniture
	04013004	Paper & packaging products

	04013005	Rubber products
	04013006	Soft Drinks
	04013007	Textiles & Clothing
	04013008	Tobacco
TOURISM & LEISURE	04014000	
	04014001	Casinos & Gambling
	04014002	Hotels & accommodation
	04014003	Recreational & Sports goods
	04014004	Restaurants & catering
	04014005	Tour operators
TRANSPORT	04015000	
	04015001	Air Transport
	04015002	Railway
	04015003	Road Transport
	04015004	Waterway & Maritime Transport

INDEX

IPTC-NAA Information Interchange Model Version No. 4   **Page 70**

October 1997

IPTC-NAA Information Interchange Model Version No. 4 **Page 71**

October 1997