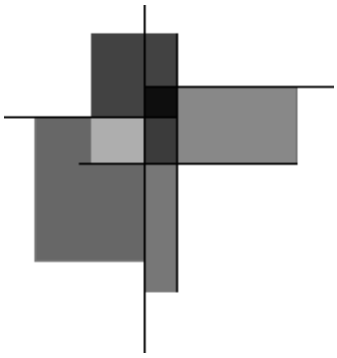

# PrintML

## Printing Industry Markup Langage©

**Professional application based on the XML language used in the graphic Industry**

**Version : printml_paper 0.9.3 (DRAFT)**

**04 august 2000**


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# Chapitre 1 : Introduction

## 1.1 Presentation of the PrintML project

PrintML or Printing Industry Markup Language is the name of a professional application derived from the XML language and intended for the graphic industry.

This application has been written for :

- the professionals in the graphic industries : printing, binding, pre-press companies;
- the customers of these industries : publishers, press agencies, and any firm using the services of a printing house regularly ;
- their suppliers : paper makers and distributors, suppliers of ink, films and other consumables, subcontractors ;
- the software publishers providing these professions.

Its aim is to establish a norm allowing its users to send management information directly from computer to computer through Internet :

- price request from a customer to the printer, and the answer,
- statement of paper consumption from the printer to the publisher,
- price of the paper from the paper distributor to the customer,
- exchange of planning and delivery information,
- search for a specific type of paper,
- orders,
- and many other messages.

This document describes the first part of PrintML, which concerns the exchange of data between printers and publishers relating to the reception, the storage and the consumption of the paper provided by the publisher to the printer.

## 1.2 Status of this document

It corresponds to version 0.9.3, which was published on August 4, 2000.

This intermediary publication is submitted to you for your comments, and is not meant for use as such.
You can e-mail your suggestions to the following address : **draft@printml.org**

A final version of this publication will be available for downloading in November 2000 on web site **http://www.printml.org**

## 1.3 List of the messages this document deals with

This document deals with messages concerning paper storage and consumption.

The messages it describes are meant for printers and their customers. They are :
- request for the state of the inventory,
- request for a list of paper movement,
- request for periodic movement (publishing frequency),
- state of the inventory,
- list of paper movements.

## 1.4 Organization of the document

**Part 1** introduction

**Part 2** the message header; the document.

**Part 3** the paper (description of the paper).

**Part 4** the publisher (group_publisher_paper).

**Part 5** the printer (group_printer_paper).

**Part 6** other elements of the DTD.

**Appendix A** an XML example with a style sheet (XSL)

**Appendix B** visualization of the *printml_paper.dtd*

**Appendix C** graphic visualization of the DTD..

## 1.5 Contact person

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## 1.6 Web site and publications

To visualize the latest publications or examples, visit PrintML's site : **http://www.printml.org**

## 1.7 Copyright



## 1.8 List of Authors

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This document was developped in collaboration with supporters of the PrintML project whose names appear on the web site **http://www.printml.org**

# Chapitre 2 : Message header

## 2.1 Presentation

This header makes it possible to describe all of the people concerned by the message : the sender, the receiver and possibly the addressee.
Example : sender A requests the state of the inventory from receiver B for the addressee C, who might be for example the customer.

Each of these people will be described with a name (Name element), a contact person (Contact element) and an address (Address element). The contact person is described with a name, an e-mail address, a phone number, a fax number and a URL. The DTD makes it possible to define which elements are optional and which ones are compulsory.

The part of the DTD corresponding to the message headers will therefore be used in all the other DTDs published later.

## 2.2 The DTD

The DTD has been built around the XML 1.0 of the W3C consortium. For further information, consult the site **http://www.w3.org/TR/REC-xml**
Here is the section of the DTD concerning the message headers.
This section is presented exactly as it really is (with the extension *.dtd).

```
<!ELEMENT document (document_header, transaction_number, date, document_class)>
<!ELEMENT document_header (identification_index | (from, to, forward_to*))>
<!ELEMENT identification_index (sender_identification_code, receiver_identification_code, forwarder_iden-
                tification_code?)>
<!ELEMENT sender_identification_code (#PCDATA)>
<!ELEMENT receiver_identification_code (#PCDATA)>
<!ELEMENT forwarder_identification_code (#PCDATA)>
<!ELEMENT from (identification, sender_identification_code)>
<!ELEMENT to ( identification)>
<!ELEMENT forward_to ( identification)>
<!ELEMENT identification (name, contact, address)>
<!ELEMENT name (#PCDATA)>
<!ELEMENT contact (contact_name, contact_email, contact_phone, contact_fax?, contact_URL?)>
<!ELEMENT contact_name (#PCDATA)>
<!ELEMENT contact_email (#PCDATA)>
<!ELEMENT contact_phone (#PCDATA)>
<!ELEMENT contact_fax (#PCDATA)>
<!ELEMENT contact_URL (#PCDATA)>
<!ELEMENT address (address_item?, address_item?, address_item?, Postcode, town, state?, country)>
<!ELEMENT address_item (#PCDATA)>
<!ELEMENT Postcode (#PCDATA)>
<!ELEMENT town (#PCDATA)>
<!ELEMENT state (#PCDATA)>
<!ELEMENT country (#PCDATA)>
<!ELEMENT transaction_number (#PCDATA)>
```

```
<!ELEMENT date EMPTY>
<!ATTLIST date day NMTOKEN #REQUIRED
                    month NMTOKEN #REQUIRED
                    year NMTOKEN #REQUIRED>
```

Notice that each element is defined as **<!ELEMENT>** only once, even if it appears as a sub-element in another definition. (This is the case for the element identification, which appears as a sub-element of from, to and forward_to).

Element sequences :

Let us go on to the verification of the document element. It must contain a document_header sub-element followed by the sub-elements date and document_class.

Zero or one sub-element (?) :

Let us take the contact element as an example. This definition makes it possible to accept either zero or a contact_fax sub-element for the data concerning this element.

Zero or plus sub-element (*) :

Each document_header sub-element must contain a sub-element from, a sub-element to and an illimited number of elements forward_to. But the message has no addressee yet, and therefore no sub-element forward_to. The sign * is used after the name of the sub-element.

At least one sub-element (+) :

When at least one sub-element is needed, but its exact number is unknown, the sign + is used after its name.

Sub-elements with an exclusive OR :

We saw that sub-elements are presented as a sequence with a comma separator. But to establish an exclusive logical relationship between two elements, for example the sub-elements document_printer and document_publisher, the operator (|) must be used in the definition instead of the usual comma.

Attributes :

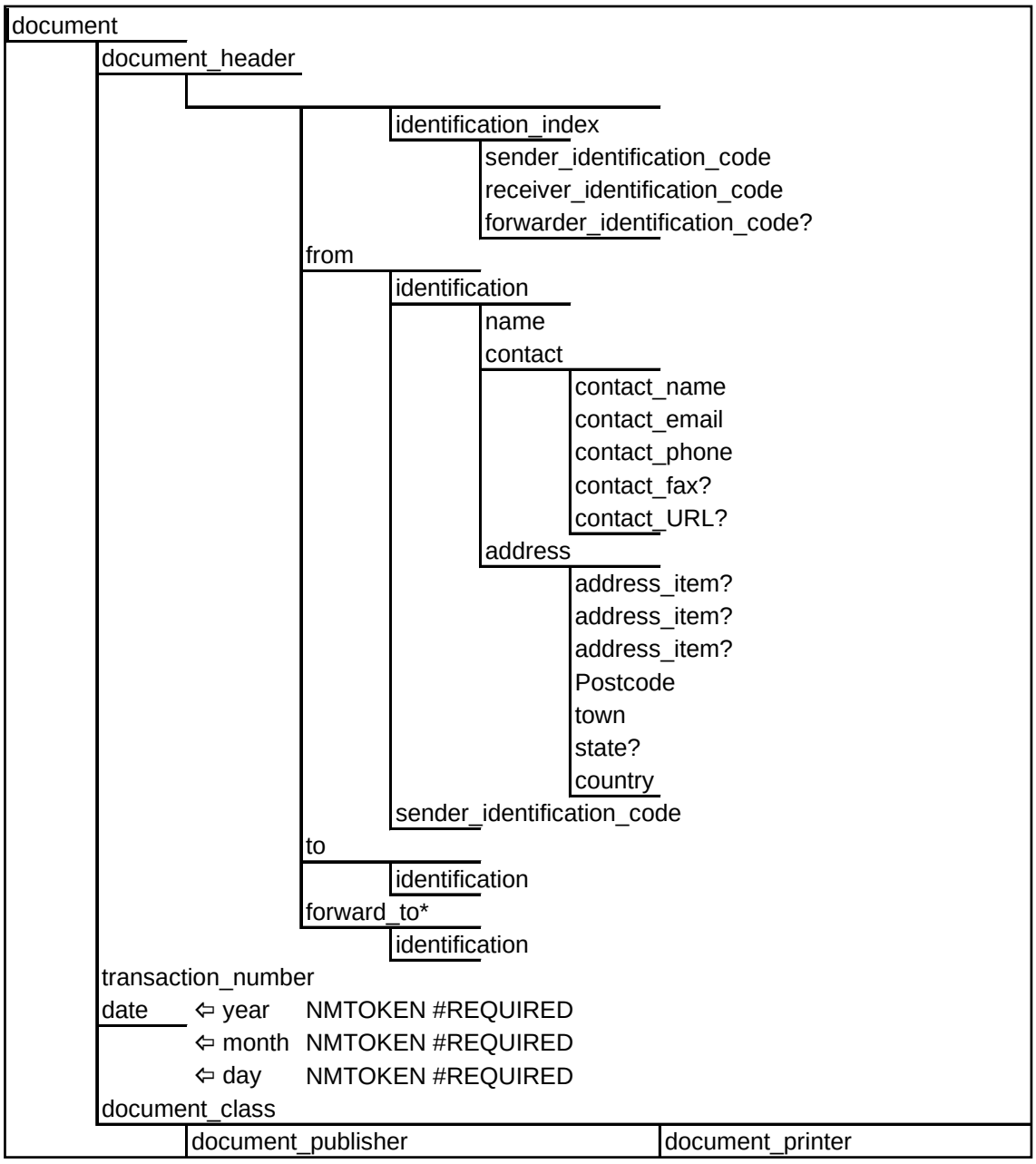
An attribute is a name-value couple associated to an element (for example year, month and day are attributes of the date element). The name and the value are chains of characters.

Like the elements, the attributes must be defined in the DTD. The tag **<!ATTLIST>** makes it possible to define these attributes.

Note : the complete DTD can be seen in Appendix B.

## 2.3 Graphic presentation of the DTD

Here, the DTD is presented as a tree structure to show the content of each element more clearly.




The complete DTD as a tree structure can be visualized in Appendix C.

## 2.4 An XML example

The following XML document is a message header. To be correct, it must match the DTD presented earlier. We notice that the document_header element contains the elements from and to but not the element forward_to.

```
<document>
    <document_header>
        <from>
            <identification>
                <name>IMPRIMERIE D'ORLEANS</name>
                <contact>
                    <contact_name>Cedric SAGORY</contact_name>
                    <contact_email>csagory@imp_orleans.com</contact_email>
                    <contact_phone>02 84 34 24 54</contact_phone>
                </contact>
                <address>
                    <address_item>1, place Jeanne d'Arc</address_item>
                    <Postcode>45000</Postcode>
                    <town>Orleans</town>
                    <country>France</country>
                </address>
            </identification>
            <sender_identification_code>IMPORL</sender_identification_code>
        </from>
        <to>
            <identification>
                <name>AIRE INFORMATIQUE</name>
                <contact>
                    <contact_name>Frederic LENA</contact_name>
                    <contact_email>nom@aireinfo.com/</contact_email>
                    <contact_phone>01 48 34 24 54</contact_phone>
                </contact>
                <address>
                    <address_item>155, av. Jean-Jaures</address_item>
                    <Postcode>93531</Postcode>
                    <town>Aubervilliers</town>
                    <country>France</country>
                </address>
            </identification>
        </to>
    </document_header>
    <transaction_number>111111</transaction_number>
    <date year="2000" month="7" day="26"/>
    <document_class>
```

## 2.5 DOCUMENT Element

<!ELEMENT document (document_header, date, document_class)>

It is the highest element in the DTD. It contains :

- document_header : identification of the sender, the receiver and the addressee(s) of the message (optional).
- date : date on which the message was sent.
- document_class : origin of the document : publisher, printer, paper maker, etc.

## 2.6 DOCUMENT_HEADER Element

<!ELEMENT document_header (identification_index | (from, to, forward_to*))>

There are two possibilities :

- either the people are corresponding for the first time and the elements *from*, *to* and *forward_to* must be defined. The *sender_identification_code* element will be indicated on the first message and will match the *receiver_identification_code* on the answer, so that both codes will be known for future messages ;

- or they already corresponded. In that case, the *identification_index* is used.

### 2.6.1 identification_index Element

If there is previous correspondance, the *identification_index* can be used, since the *receiver_identification_code* is already provided in the first message and the *sender_identification_code* will be supplied by the answer to the second message.

<!ELEMENT identification_index (sender_identification_code, receiver_identification_code, forwarder_identification_code?)>
<!ELEMENT sender_identification_code (#PCDATA)>
<!ELEMENT receiver_identification_code (#PCDATA)>
<!ELEMENT forwarder_identification_code (#PCDATA)>

### 2.6.2 from, to and forward_to Elements

These elements make it possible to define the various people concerned by the message :

- from : message sender
- to : message receiver
- forward_to : message addressee(s) (optional)

<!ELEMENT from (identification, sender_identification_code?)>
<!ELEMENT to ( identification)>
<!ELEMENT forward_to ( identification)>
<!ELEMENT transaction_number (#PCDATA)>

These three elements (*from*, *to* and *forward_to*) are composed of the identification element.

Special case : the from element is also composed of the compulsory element *sender_identification_code*.

Note : if the message receiver use *identification_index* element for the request, it will have to use this value to inform the element *receiver_identification_code.*

### 2.6.3 identification Element

This element allows the various people concerned by the message to identify themselves.

<!ELEMENT identification (name, contact, address)>

It must contain the following elements :

- name : name of the company (no sub-element)
- contact : the author of the message
- address : address of the company

### 2.6.4 contact Element

<!ELEMENT contact ( contact_name, contact_email, contact_phone, contact_fax?, contact_URL?)>
<!ELEMENT contact_name (#PCDATA)>
<!ELEMENT contact_email (#PCDATA)>
<!ELEMENT contact_phone (#PCDATA)>
<!ELEMENT contact_fax (#PCDATA)>
<!ELEMENT contact_URL (#PCDATA)>

It contains the following elements :

- contact_name (compulsory)
- contact_email (compulsory)
- contact_phone (compulsory)
- contact_fax (optional)
- contact_URL (optional)

### 2.6.5 address Element

<!ELEMENT address (address_item?, address_item?, address_item?, Postcode, town, state?, country)>
<!ELEMENT address_item (#PCDATA)>
<!ELEMENT Postcode (#PCDATA)>
<!ELEMENT town (#PCDATA)>
<!ELEMENT state (#PCDATA)>
<!ELEMENT country (#PCDATA)>

The company's address contains the following elements :

- address_element : address line (optional, up to three lines)
- postcode
- town
- state (for the USA and Canada)
- country

## 2.7 TRANSACTION_NUMBER Element

PrintML transaction number chosen freely by the sender. It identifies a transaction and avoids double processing.

<!ELEMENT transaction_number (#PCDATA)>

## 2.8 DATE Element

This element indicates when the transaction took place. It is the date on which the sender sent the message.

The DTD looks like this :

```
<!ELEMENT date EMPTY>
<!ATTLIST date day NMTOKEN #REQUIRED
               month NMTOKEN #REQUIRED
               year NMTOKEN #REQUIRED>
```

This element does not have any sub-element (EMPTY), but it is made of three compulsory parameters (#REQUIRED) : year, month, day.

## 2.9 DOCUMENT_CLASS Element

Document_class indicates the origin of the document. It can be the publisher or the printer.

- document_publisher
- document_printer

```
<!ELEMENT document_class ( document_publisher | document_printer)>
<!ELEMENT document_publisher ( group_publisher_paper)>
<!ELEMENT document_printer ( group_printer_paper)>
```

For messages concerning the paper inventory, the document_publisher element contains only the *group_publisher_paper* element, and the *document_printer* element contains only the *group_printer_paper* element..

# Chapitre 3 : PAPER Element

## 3.1 Presentation

It contains all of the elements necessary to define a paper.

<!ELEMENT paper (paper_index | paper_item)>

There are two possibilities :

- either the publisher and the printer are corresponding for the first time and *paper_item* must be defined to indicate all of the characteristics of the paper. The *sender_paper_code* element will be indicated on the first message and will match the *receiver_identification_code* on the answer, so that both codes will be known for future messages;

- or they already corresponded. In that case, the *paper_index* is used.

This *paper* element will be used again in other messages such as price requests for example.

Note : the technical characteristics are usually not needed in this type of message, that is why all of the sub-elements of *technical_detail* are optional.

## 3.2 PAPER_INDEX Element

If there is previous correspondance between the publisher and the printer, the *paper_index* is used, since the *sender_paper_code* and the *receiver_paper_code* are already known.

<!ELEMENT paper_index (sender_paper_code, receiver_paper_code)>
<!ELEMENT sender_paper_code (#PCDATA)>
<!ELEMENT receiver_paper_code (#PCDATA)>

## 3.3 PAPER_ITEM Element

It makes it possible to describe the paper more or less precisely, depending on the description of optional elements.

<!ELEMENT paper_item (owner_code, paper_code, paper_designation,
(paper_colour | paper_white), paper_weight, (web | sheet), job_publication_code?, technical_detail?)>
<!ATTLIST paper_item paper_class (newsprint | glossy_art | glossy_art_2_faces |
matt_art | matt_art_2_faces | half_matt_art_paper |

satin_finished_art_paper | art_paper | art_paper_2_sides |
low_grade_art_paper | low_grade_art_paper_2_sides |
mechanical_art_paper | mechanical_art_paper_2_sides | lightweight |
bulky_woodfree | woodfree | graded_woodfree | bible | NCR_paper |
fancy_paper | environment_friendly_paper | artcard_coated |
artcard_coated_2_sides | grey_board | Bond | Coated_text_book_offset |
Cover | Index | Tag | Bristol | Newsprint) #REQUIRED
recycled (yes | no) "no"
unit_control ( sheets | kg | ream | thousand_sheets |
Linear_meter ) #REQUIRED>

The compulsory elements are :

- owner_code,
- paper_code ,
- paper_designation,
- paper_colour | paper_white,
- paper_weight,
- web | sheet,

The optional elements are :

- job_publication_code,
- technical_detail.

This paper_item is composed of three parameters :

- unit_control

| | | | | |
|---|---|---|---|---|
| sheets | kg | ream | thousand_sheets | linear_meter |
| feuille | kg | rame | mille de feuille | mètre linéaire |

- recycled (yes | no)

- paper_class

| | |
|---|---|
| glossy art | couché brillant |
| glossy art 2 faces | couché brillant 2 faces |
| matt art | couche mat |
| matt art 2 faces | couche mat 2 faces |
| half matt art paper | couche semi mat |
| satin finished art paper | satine |
| artpaper | couche sans bois |
| artpaper 2 sides | couche sans bois 2 faces |
| low grade artpaper | couché traces de bois |
| low grade artpaper 2 sides | couché traces de bois 2 faces |
| mechanical art paper | couché avec bois |
| mechanical art paper 2 sides | couché avec bois 2 faces |
| lightweight | papier mince |
| bulky woodfree | bouffant |
| woodfree | offset sans bois |
| graded woodfree | offset traces de bois |
| bible | papier bible |
| NCR paper | autocopiant |
| fancy paper | (tous les autres papiers) |
| environment friendly paper | écologique, blanchi sans utilisation acide |
| artcard coated | carton couché |
| artcard coated 2 sides | carton couché 2 faces |
| grey board | carton gris pour couverture |
| Bond | bond |
| Coated_text_book_offset | couché, pour texte, édition et offset |
| Cover | Couverture |
| Index | Fiche |
| Tag | Etiquette |
| Bristol | Bristol |
| Newsprint | Journal |

## 3.4 OWNER_CODE Element

Among other things, the **owner_code** allows the user to sort papers by customer. It is composed of two elements. The first one is compulsory, but can be empty. It corresponds to the sender's paper code. The second element is optional.

<!ELEMENT owner_code (sender_owner_code, receiver_owner_code?)>
<!ELEMENT sender_owner_code (#PCDATA)>
<!ELEMENT receiver_owner_code (#PCDATA)>

But if a message has already been sent, both codes are known and will have to be indicated.

## 3.5 PAPER_CODE Element

It is composed of two elements.

<!ELEMENT paper_code (sender_paper_code, receiver_paper_code?)>

The first one is compulsory. It corresponds to the sender's paper code. The second is optional since it corresponds to the receiver's paper code, which is not always known .
But if a message has already been sent, both codes are known and the *paper_index* element can be used.

## 3.6 PAPER_WEIGHT Element

The **paper weight** identifies a printing paper. When the **metric system** is used, which is the case almost everywhere except in North America, the basic weight is called **grammage** and it designates the weight per surface unit in grams per square meter (GSM).

```
<!ELEMENT paper_weight (metric_system | basis_weight | M_weight)>
<!ELEMENT metric_system (grammage)>
<!ELEMENT grammage (#PCDATA)>
<!ATTLIST grammage grammage_unit  CDATA #FIXED "GSM">
```

In North American countries, the paper weight is identified according to its **basic weight**, which may be the **weight of a ream** or the **basic weight of 1000 “M” sheets** in Canada.

The **weight of a ream** is expressed in pounds. A ream is composed of 500 standard (basic) format sheets of a specific type of paper. For example, the standard format for BOND paper is 17 x 22 (therefore the *basic_size* parameter is defined as 17 x 22 for the *bond* element).

```
<!ELEMENT basis_weight (paper_class, basis_weight_value)>
<!ELEMENT basis_weight_value (ream_weight_value |
            thousand_sheets_weight_value )>
<!ELEMENT ream_weight_value (#PCDATA)>
<!ATTLIST ream_weight_value ream_weight_unit CDATA #FIXED  "lb">
<!ELEMENT thousand_sheets_weight_value (#PCDATA)>
<!ATTLIST thousand_sheets_weight_value thousand_sheets_weight_unit CDATA
            #FIXED  "M">
<!ELEMENT paper_class (Bond | Coated_text_book_offset | Cover | Index | Tag |
            Bristol | Newsprint)>
<!ELEMENT Bond EMPTY>
<!ATTLIST Bond basic_size CDATA #FIXED "17x22">
<!ELEMENT Coated_text_book_offset EMPTY>
<!ATTLIST Coated_text_book_offset basic_size CDATA #FIXED "25x38">
<!ELEMENT Cover EMPTY>
<!ATTLIST Cover basic_size (20x26 | 22.5x35) "20x26">
<!ELEMENT Index EMPTY>
<!ATTLIST Index basic_size CDATA #FIXED "25.5x30.5">
<!ELEMENT Tag EMPTY>
<!ATTLIST Tag basic_size CDATA #FIXED "24x36">
<!ELEMENT Bristol EMPTY>
<!ATTLIST Bristol basic_size CDATA #FIXED "22.5x28.5">
```

```
<!ELEMENT Newsprint EMPTY>
<!ATTLIST Newsprint basic_size CDATA #FIXED "24x36">
```

In Canada, the expression **weight M** is used also for a paper class (paper_class element). It corresponds to the real weight of 1000 sheets of paper of a given format (*size* element describe in *paper* element).

```
<!ELEMENT M_weight (paper_class, M_weight_value)>
<!ELEMENT M_weight_value (#PCDATA)>
<!ATTLIST M_weight_value M_weight_unit CDATA #FIXED  "lb">
```

## 3.7 WEB, SHEET, GRAIN_DIRECTION Element

They describe the format of the paper used.

- web : for paper tape ; it can include information on the *reel_diameter* and the *reel_number* ;
- sheet : for sheets of paper ; it includes the *grain_direction* element, which indicates the direction of the fibers (height or width).

```
<!ELEMENT web ( width, reel_diameter?, reel_number?)>
<!ELEMENT sheet (height , width)>
<!ATTLIST sheet grain_direction (height | width) "height">
<!ELEMENT height (#PCDATA)>
<!ELEMENT width (#PCDATA)>
<!ELEMENT reel_diameter (#PCDATA)>
<!ELEMENT reel_number (#PCDATA)>
```

## 3.8 TECHNICAL_DETAIL Element

It allows users to define more or less precisely the technical characteristics of the paper (all of these elements are optional).

- thickness
- brightness
- bulk
- tensile_index
- tear_index
- bursting_strength
- stiffness
- fold_resistance
- opacity
- gloss
- porosity
- hydrometry
- rugosity

```
<!ELEMENT technical_detail ( thickness?, brightness?, bulk?, tensile_index?,
```

```
        tear_index?, bursting_strength?, stiffness?, fold_resistance?, opacity?,
        gloss?, porosity?, hydrometry?, rugosity?)>
<!ELEMENT thickness (#PCDATA)>
<!ELEMENT brightness (#PCDATA)>
<!ATTLIST brightness type CDATA #REQUIRED>
<!ELEMENT bulk (#PCDATA)>
<!ELEMENT tensile_index (#PCDATA)>
<!ATTLIST tensile_index feel ( long | through ) "long">
<!ELEMENT tear_index (#PCDATA)>
<!ELEMENT bursting_strength (#PCDATA)>
<!ELEMENT stiffness (#PCDATA)>
<!ELEMENT fold_resistance (#PCDATA)>
<!ELEMENT opacity (#PCDATA)>
<!ELEMENT gloss (#PCDATA)>
<!ELEMENT porosity (#PCDATA)>
<!ELEMENT hydrometry (#PCDATA)>
<!ELEMENT rugosity EMPTY>
<!ATTLIST rugosity side ( tick | felt ) #REQUIRED>
```

# Chapitre 4 : group_publisher_paper

## 4.1 Presentation

This element contains all of the messages from the publisher concerning the paper : request for the state of the inventory, request for paper movement, and request for periodic movement.

<!ELEMENT group_publisher_paper (paper_header, report_request)>

Note : - an XML example with its style sheet (XSL) can be found in Appendix A,
- the DTD can be found in Appendix B ,
- a presentation as a tree structure can be found in Appendix C.

## 4.2 PAPER_HEADER Element

This element contains general information about the paper :

- measurement_unit : mm or cm or inches
- decimal_separator : period or comma.

<!ELEMENT paper_header EMPTY>
<!ATTLIST paper_header measurement_unit ( mm | cm | inches ) #REQUIRED
decimal_separator ( point | coma ) #REQUIRED>

It does not include any sub-element (EMPTY), but is composed of two #REQUIRED parameters : measurement_unit and decimal_separator. An XML example can be visualized at paragraph 4.3.1

Note : all of the values are decimal, even when the measurement unit chosen is inches.

## 4.3 REPORT_REQUEST Element

It contains all of the requests for paper print-outs from the publisher. It is composed of the following three sub-elements :

- inventory_request
- movement_request
- periodic_movement_request

The DTD looks like this :

<!ELEMENT report_request (inventory_request* , movement_request*,

periodic_movement_request?)>

### 4.3.1 inventory_request Element

There are two types of **inventory request**.

<!ELEMENT inventory_request ( (paper*,date) | (job_publication_code+, date))>

The first one is an inventory request for the papers described in *paper* and at a specific date.
In the XML file of the request, an empty tag indicates that the publisher wants in inventory request for all of the papers.

The second one is an inventory request for the papers used for a specific code number and a specific date (see paragraph 6.1 for the *job_publication_code* element).

XML EXAMPLE :

```
<group_publisher_paper>
    <paper_header measurement_unit="cm" decimal_separator="coma"/>
    <report_request>
        <inventory_request>
            <paper>
                <paper_item unit_control="sheets">
                    <owner_code>
                        <sender_owner_code>AIREINFO</sender_owner_code>
                    </owner_code>
                    <paper_code>
                        <sender_paper_code>BRI80</sender_paper_code>
                    </paper_code>
                    <paper_designation>Bristol</paper_designation>
                    <paper_colour>blue</paper_colour>
                    <paper_weight>
                        <metric_system>
                            <grammage>80</grammage>
                        </metric_system>
                    </paper_weight>
                    <sheet>
                        <height>45</height>
                        <width>64</width>
                    </sheet>
                </paper_item>
            </paper>
            <paper>
                <paper_index>
                    <sender_paper_code>BRI90</sender_paper_code>
                    <receiver_paper_code>112</receiver_paper_code>
                </paper_index>
            </paper>
            <date day="31" month="5" year="2000"/>
        </inventory_request>
        <inventory_request>
            <job_publication_code>
                <publisher_code>TELE1</publisher_code>
                <printer_code>TELERAMA</printer_code>
            </job_publication_code>
            <date day="15" month="7" year="2000"/>
        </inventory_request>
```

### 4.3.2 movement_request Element

There are three types of request for paper_movement :

- a movement request for a specific job ,
- a movement request for a specific publication code and date ;
- a movement request for one (or several) movement(s) and for one (or several) paper(s).

```
<!ELEMENT movement_request (job_number |
                    (job_publication_code, first_mvt_date , last_mvt_date)
          | (movement_request_type*, paper*, first_mvt_date , last_mvt_date) )>
```

In the XML file of the request, an empty *movement_request_type* tag indicates that the publisher wants movement request for all of the movements. In the same manner, an empty *paper* tag indicates that the publisher wants movement request for all of the papers.

XML EXAMPLE :

```
<movement_request>
    <movement_request_type type="supplier_receipts"/>
    <movement_request_type type="supplier_returns"/>
    <paper>
        <paper_item unit_control="sheets">
            <owner_code>
                <sender_owner_code>AIREINFO</sender_owner_code>
            </owner_code>
            <paper_code>
                <sender_paper_code>BRI100</sender_paper_code>
                <receiver_paper_code>113</receiver_paper_code>
            </paper_code>
            <paper_designation>Bristol</paper_designation>
            <paper_colour>blue</paper_colour>
            <paper_weight>
                <metric_system>
                    <grammage>80</grammage>
                </metric_system>
            </paper_weight>
            <sheet>
                <height>45</height>
                <width>64</width>
            </sheet>
        </paper_item>
    </paper>
    <first_mvt_date day="01" month="6" year="2000"/>
    <last_mvt_date day="31" month="6" year="2000"/>
</movement_request>
<movement_request>
    <job_publication_code>
        <publisher_code>TELE1</publisher_code>
        <printer_code>TELERAMA</printer_code>
    </job_publication_code>
    <first_mvt_date day="01" month="7" year="2000"/>
    <last_mvt_date day="31" month="7" year="2000"/>
</movement_request>
<movement_request>
    <job_number>
        <publisher_code>12003</publisher_code>
        <printer_code>A3RT64</printer_code>
    </job_number>
</movement_request>
</report_request>
</group_publisher_paper>
```

### 4.3.3 periodic_movement_request Element

It allows the user to make a periodic request.

<!ELEMENT periodic_movement_request EMPTY>
<!ATTLIST periodic_movement_request
periodicity (weekly | monthly | quaterly | yearly) #REQUIRED>

It does not include any sub-element (EMPTY), but is composed of one #REQUIRED parameter : *periodicity*. The required periodicity for the print-outs must be indicated : *weekly*, *monthly*, *quarterly* or *yearly*.

# Chapitre 5 : group_printer_paper

## 5.1 Presentation

This element contains all of the messages from the publisher concerning the paper : *inventory_list* and *movement_list*.

<!ELEMENT group_printer_paper (paper_header, inventory_list*, movement_list*)>

Note : - an XML example with its style sheet (XSL) can be found in Appendix A ;
- the DTD can be found in Appendix B ;
- a presentation as a tree structure can be found in Appendix C.

## 5.2 INVENTORY_LIST Element

It allows the user to print out inventory lists. The list may be printed out for a specific paper or a specific publication code.

<!ELEMENT inventory_list ( paper_list_item |
(job_publication_code, paper_list_item*))>

- paper_list_item : includes several elements defining a paper list;
- job_publication_code

EXAMPLE :

```
<document_printer>
  <group_printer_paper>
    <paper_header measurement_unit="cm" decimal_separator="point"/>
    <inventory_list>
      <job_publication_code>
        <publisher_code>TELE1</publisher_code>
        <printer_code>TELERAMA</printer_code>
      </job_publication_code>
      <paper_list_item>
        <paper>
          <paper_item unit_control="sheets">
            <owner_code>
              <sender_owner_code>CAIRE</sender_owner_code>
            </owner_code>
            <paper_code>
              <sender_paper_code>111</sender_paper_code>
              <receiver_paper_code>BRI80</receiver_paper_code>
            </paper_code>
            <paper_designation>Bristol</paper_designation>
            <paper_colour>blue</paper_colour>
            <paper_weight>
              <metric_system>
                <grammage>80</grammage>
              </metric_system>
            </paper_weight>
            <sheet>
              <height>45</height>
              <width>64</width>
            </sheet>
          </paper_item>
        </paper>
        <quantity>5000</quantity>
        <unusable_paper_quantity>1000
        </unusable_paper_quantity>
        <plant_allocation_detail plant_code="MAG11">
          <quantity>3000</quantity>
        </plant_allocation_detail>
        <plant_allocation_detail plant_code="MAG12">
          <quantity>2000</quantity>
        </plant_allocation_detail>
      </paper_list_item>
    </inventory_list>
  </group_printer_paper>
```

## 5.3 MOVEMENT_LIST Element

It allows the user to print out a **paper movement list**. The list may be printed out for a specific publication code (see paragraph 6.1 : *job_publication_code*), for a specific job number, or for one (or several) specific paper(s) or movement(s). In that case, an inventory can be made BEFORE and AFTER the movement.

<!ELEMENT movement_list ( (job_publication_code, movement_item+) |
(job_number, paper, movement_detail+) |
movement_item)>

EXAMPLE 1 : movement list for a specific **job_publication_code**

```
<movement_list>
    <job_publication_code>
        <publisher_code>TELE1</publisher_code>
        <printer_code>TELERAMA</printer_code>
    </job_publication_code>
    <movement_item>
        <paper>
            <paper_item unit_control="kg">
                <owner_code>
                    <sender_owner_code>CAIRE</sender_owner_code>
                </owner_code>
                <paper_code>
                    <sender_paper_code>210</sender_paper_code>
                </paper_code>
                <paper_designation>Perigord</paper_designation>
                <paper_colour>yelow</paper_colour>
                <paper_weight>
                    <metric_system>
                        <grammage>90</grammage>
                    </metric_system>
                </paper_weight>
                <web>
                    <width>87.1</width>
                </web>
            </paper_item>
        </paper>
        <movement_detail plant_code="MAG1">
            <movement_type>
                <supplier_receipts>
                    <supplier_name>ARJO</supplier_name>
                </supplier_receipts>
            </movement_type>
            <date day="10" month="3" year="2000"/>
            <quantity>30000</quantity>
            <remarks>30 bobines</remarks>
        </movement_detail>
    </movement_item>
</movement_list>
```

EXAMPLE 2 : movement list for a specific **job_number**

```
<movement_list>
    <job_number>
        <publisher_code>12003</publisher_code>
        <printer_code>A3RT64</printer_code>
    </job_number>
    <paper>
        <paper_item unit_control="kg">
            <owner_code>
                <sender_owner_code>CAIRE</sender_owner_code>
            </owner_code>
            <paper_code>
                <sender_paper_code>412</sender_paper_code>
            </paper_code>
            <paper_designation>Perigord</paper_designation>
            <paper_colour>blue</paper_colour>
            <paper_weight>
                <metric_system>
                    <grammage>100</grammage>
                </metric_system>
            </paper_weight>
            <web>
                <width>98.2</width>
            </web>
        </paper_item>
    </paper>
    <movement_detail>
        <movement_type>
            <paper_consumption>
                <job_number>
                    <publisher_code>12003</publisher_code>
                    <printer_code>A3RT64</printer_code>
                </job_number>
                <job_title>le Horla</job_title>
                <job_publication_code>
                    <publisher_code>TELE1</publisher_code>
                    <printer_code>TELERAMA</printer_code>
                </job_publication_code>
            </paper_consumption>
        </movement_type>
        <date day="15" month="3" year="2000"/>
        <quantity>5000</quantity>
        <remarks>5 bobines</remarks>
    </movement_detail>
</movement_list>
```

EXAMPLE 3 : movement list for one (or several) specific **paper(s)** or **movement(s)**.

```
<movement_list>
    <movement_item>
        <paper>
            <paper_item unit_control="kg">
                <owner_code>
                    <sender_owner_code>CAIRE</sender_owner_code>
                </owner_code>
                <paper_code>
                    <sender_paper_code>210</sender_paper_code>
                </paper_code>
                <paper_designation>Perigord</paper_designation>
                <paper_colour>yelow</paper_colour>
                <paper_weight>
                    <metric_system>
                        <grammage>80</grammage>
                    </metric_system>
                </paper_weight>
                <web>
                    <width>87.1</width>
                </web>
            </paper_item>
        </paper>
        <movement_detail plant_code="MAG1">
            <movement_type>
                <supplier_receipts>
                    <supplier_name>ARJO</supplier_name>
                </supplier_receipts>
            </movement_type>
            <date day="10" month="3" year="2000"/>
            <quantity>30000</quantity>
            <remarks>30 bobines</remarks>
        </movement_detail>
        <movement_detail>
            <movement_type>
                <paper_consumption>
                    <job_number>
                        <publisher_code>12003</publisher_code>
                        <printer_code>A3RT64</printer_code>
                    </job_number>
                    <job_title>le Horla</job_title>
                    <job_publication_code>
                        <publisher_code>TELE1</publisher_code>
                        <printer_code>TELERAMA</printer_code>
                    </job_publication_code>
                </paper_consumption>
            </movement_type>
            <date day="15" month="3" year="2000"/>
            <quantity>5000</quantity>
            <remarks>5 bobines</remarks>
        </movement_detail>
```

# Chapitre 6 : Other Elements of the DTD

## 6.1 JOB_PUBLICATION_CODE Element

It indicates a publication code.

<!ELEMENT job_publication_code (publisher_code, printer_code)>
<!ELEMENT publisher_code (#PCDATA)>
<!ELEMENT printer_code (#PCDATA)>

The job_title could be for example " magazine 12 " and the publication_code "MAGAZINE". Papers would then be printed out according to the type of magazine. The sender needs to know the receiver's publication code to get an answer.

## 6.2 JOB_NUMBER Element

To request the print-out of papers for a specific job title, a publisher must know the job number used by the printer. When the request is made, the publisher sends his job number, which can then be used by the printer in the answer.

<!ELEMENT job_number (publisher_code, printer_code)>

## 6.3 MOVEMENT_REQUEST_TYPE Element

It describes the type(s) of movement requested from the printer.

<!ELEMENT movement_request_type EMPTY>
<!ATTLIST movement_request_type type ( supplier_receipts | supplier_returns |
paper_consumption | positive_adjust | negative_adjust |
internal_move | transfer_paper | transformation_input |
transformation_output ) #REQUIRED>

It does not contain any sub-element (EMPTY), but is composed of the #REQUIRED parameter : *type.*

- supplier_receipts
- supplier_returns
- paper_consumption
- positive_adjust
- negative_adjust
- internal_move (within the company)
- transfer_paper (transfering paper to another company : sale of paper, etc)
- transformation_input
- transformation_output

The customer can thus list specific movements.

## 6.4 FIRST_MVT_DATE and LAST_MVT_DATE Elements

They allow the user to define the period covered by a movement list request (or answer).

```
<!ELEMENT first_mvt_date EMPTY>
<!ATTLIST first_mvt_date    day NMTOKEN #REQUIRED
                            month NMTOKEN #REQUIRED
                            year NMTOKEN #REQUIRED>
<!ELEMENT last_mvt_date EMPTY>
<!ATTLIST last_mvt_date    day NMTOKEN #REQUIRED
                           month NMTOKEN #REQUIRED
                           year NMTOKEN #REQUIRED>
```

## 6.5 PAPER_LIST_ITEM Element

It includes sub-elements which define a paper list :

- paper
- quantity
- unusable_paper_quantity
- plant_allocation_detail : how much paper there is and where it is located in the plant

```
<!ELEMENT paper_list_item (paper, quantity, unusable_paper_quantity?,
                           plant_allocation_detail*)>
<!ELEMENT quantity (#PCDATA)>
<!ELEMENT unusable_paper_quantity (#PCDATA)>
<!ELEMENT plant_allocation_detail ( quantity)>
<!ATTLIST plant_allocation_detail plant_code CDATA #REQUIRED>
```

## 6.6 MOVEMENT_ITEM Element

It includes sub-elements which define a movement list :

- paper
- quantity, unusable_paper_quantity, first_mvt_date (to print out a paper inventory BEFORE the movement list ; optional);
- movement_detail (describes one line of the movement list);
- quantity, unusable_paper_quantity, last_mvt_date (to print out a paper inventory AFTER the movement list ; optional).

```
<!ELEMENT movement_item ( paper,
                          (quantity, unusable_paper_quantity?, first_mvt_date)?,
                          movement_detail+,
```

(quantity, unusable_paper_quantity?, last_mvt_date)? )>

## 6.7 MOVEMENT_DETAIL Element

It is a line on the paper movement list and it contains the following elements :

- movement_type
- date
- quantity : the quantity which was moved,
- remarks
- plant_code (an optional parameter)

<!ELEMENT movement_detail ( movement_type, date, quantity, remarks?)>
<!ATTLIST movement_detail plant_code CDATA #IMPLIED>

## 6.8 MOVEMENT_TYPE Element

It describes the various movement types. Unlike the movement_request_type, which was used to request a move, it is used to print out a list of movements (it is the printer's answer to the request).

<!ELEMENT movement_type ( supplier_receipts | supplier_returns |
paper_consumption | positive_adjust | negative_adjust |
internal_move | transfer_paper | transformation_input |
transformation_output )>

Note : the movement_request_type described earlier cannot be used here, since the elements composing movement_type are not all EMPTY.

### 6.8.1 supplier_receipts, supplier_returns Elements

Receipts and returns from suppliers.

<!ELEMENT supplier_receipts ( (supplier_code | supplier_name)+ )>
<!ELEMENT supplier_returns ( (supplier_code | supplier_name)+ )>
<!ELEMENT supplier_code (#PCDATA)>
<!ELEMENT supplier_name (#PCDATA)>

When printing out a movement line for a supplier receipt or return, the printer indicates the supplier's name and/or code.

### 6.8.2 paper_consumption Element

Indicates the consumption of paper.

<!ELEMENT paper_consumption ( job_number, job_title, job_publication_code?)>
<!ELEMENT job_title (#PCDATA)>

When printing out a movement line for paper consumption, the printer indicates the printer's and the customer's job numbers, the job title and the paper publication

code (if there is one).

### 6.8.3 positive_adjust, negative_adjust Elements

Positive and negative adjustment :

<!ELEMENT positive_adjust EMPTY>
<!ELEMENT negative_adjust EMPTY>

### 6.8.4 internal_move, transfer_paper Elements

The internal_move element allows the user to move paper within the plant, for example from one storage place to another.

The transfer_paper element allows the user to transfer papers to other firms. The name of this other firm can be indicated as description (#PCDATA).

<!ELEMENT internal_move (#PCDATA)>
<!ELEMENT transfer_paper (#PCDATA)>

### 6.8.5 transformation_input, transformation_output Elements

They make it possible to indicate the origin and the destination of a transformed paper.

Example : 500 sheets, format 64*92, cut into 1,000 sheets, format 45*64

<!ELEMENT transformation_input (#PCDATA)>
<!ELEMENT transformation_output (#PCDATA)>

# Appendix A - Inventory & mouvement request

31/ 8/ 2000

**From : AIRE INFORMATIQUE**
Olivier PEAUCELLE/Frederic LENA
email : nom@aireinfo.com/
Phone : 01 48 34 24 54
155, av. Jean-Jaures
93531 Aubervilliers France
Code émetteur : AIREINFO

**To : IMPRIMERIE D'ORLEANS**
Cedric SAGORY
email : csagory@imp_orleans.com
Phone : 02 84 34 24 54
1, place Jeanne d'Arc
45000 Orleans France

**transaction number :** 111091

**measurement unit :** inches

## Inventory request

| paper code : sender/receiver | paper class (basic size) | paper designation | paper colour | paper weight | size | unit control |
|---|---|---|---|---|---|---|
| 111 / | Bond (17x22) | - | white | 20 lb **(basis weight)** | 22 x 17 | sheets |

**à la date du** 15/6/2000 :

- **for particular job publication code**

Publisher code : TELE1
Printer code: TELERAMA
**last mvt date :** 15/8/2000

## Mouvement request

**first mvt date:** 01/7/2000
**last mvt date:** 31/7/2000
**mouvement type :** supplier_receipts
**mouvement type :** supplier_returns

| paper code : sender/receiver | paper class (basic size) | paper designation | paper colour | paper weight | size | unit control |
|---|---|---|---|---|---|---|
| BRI100 / | woodfree | Bristol | blue | 80 g/m² | 64 x 45 | sheets |

# Appendix A - Inventory list

**From : IMPRIMERIE D'ORLEANS**
Cedric SAGORY
email : csagory@imp_orleans.com
Phone : 02 84 34 24 54
1, place Jeanne d'Arc
45000 Orleans France
Code émetteur : IMPORL

**To : AIRE INFORMATIQUE**
Olivier PEAUCELLE/Frederic LENA
email : nom@aireinfo.com/
Phone : 01 48 34 24 54
155, av. Jean-Jaures
93531 Aubervilliers France

**transaction number :** 109504

## Inventory list

| **paper code : sender/receiver** | **paper class (basic size)** | **paper designation** | **paper colour** | **paper weight** | **size** (inches) | **quantity** | **unusable quantity** | **unit control** |
|---|---|---|---|---|---|---|---|---|
| 111 / | Bond (17x22) | - | white | 20 lb **(basis weight)** | 17 x 22 | 5000 | 1000 | sheets |
| 315 / | Bond (17x22) | - | Blue | 40 M **(basis weight)** | 17 x 22 | 1000 | | sheets |
| 413 / | Tag (24x36) | - | white | 100 lb **(basis weight)** | 24 x 36 | 5.5 | 1.5 | thousand_sheets |
| 10120 / | Index (24x36) | - | white | 200 M **(M weight)** | 24 x 36 | 7 | | thousand_sheets |

**technical detail:**

**thickness** : 72; **brightness** (appareil de mesure : ISO) : 95; **bulk**: 0.8; **tensile index** : 52; **tear index**(en kN): 5; **bursting strength** : ; **stiffness** : 8; **fold resistance** : ; **opacity** : 61; **gloss** (date of production : ) : ; **porosity** : .6; **hydrometry** : 50; **rugosity** : ;

| **paper code : sender/receiver** | **paper class** | **paper designation** | **paper colour** | **paper weight** | **size** (cm) | **quantity** | **unusable quantity** | **unit control** |
|---|---|---|---|---|---|---|---|---|
| 111 / | woodfree | Centaure | white | 80 g/m² | 45 x 64 | 5000 | 1000 | sheets |

# Appendix A - Mouvement List

**From : IMPRIMERIE D'ORLEANS**
Cedric SAGORY
email : csagory@imp_orleans.com
Phone : 02 84 34 24 54
1, place Jeanne d'Arc
45000 Orleans France
Sender code : AIREINFO

**To : AIRE INFORMATIQUE**
Olivier PEAUCELLE/Frederic LENA
email : nom@aireinfo.com/
Phone : 01 48 34 24 54
155, av. Jean-Jaures
93531 Aubervilliers France

**transaction number :** 210019

## Mouvement list

**measurement unit :** (inches)

| paper code : sender/receiver | paper class (basic size) | paper designation | paper colour | paper weight | size | unit control |
|---|---|---|---|---|---|---|
| 111 / | Bond (17x22) | - | white | 20 lb **(basis weight)** | 17 x 22 | sheets |

| plant code | date | mouvement | code/name | job number | title | quantity + | quantity - | remarks |
|---|---|---|---|---|---|---|---|---|
| MAG1 | 10/7/2000 | supplier receipts | ARJO | - | - | 30000 | - | 30 pallets |
| | 15/3/2000 | paper consumption | - | 12003 A3RT64 | le Horla | - | 5000 | 5 pallets |
| | 17/3/2000 | adjust + | - | - | - | 750 | - | |
| MAG2 | 17/3/2000 | from MAG1 | - | - | - | 750 | 750 | |

- **for particular job publication code**

Publisher code : TELE1
Printer code: TELERAMA

| paper code : sender/receiver | paper class (basic size) | paper designation | paper colour | paper weight | size | unit control |
|---|---|---|---|---|---|---|
| 10120 / | Index (24x36) | - | white | 200 M **(M weight)** | 24 x 36 | thousand_sheets |

| plant code | date | mouvement | code/name | job number | title | quantity + | quantity - | remarks |
|---|---|---|---|---|---|---|---|---|
| MAG1 | 10/3/2000 | supplier receipts | ARJO | - | - | 30 | - | 30 pallets |

# Appendix B - printml_paper.dtd

```
<!ELEMENT document (document_header, transaction_number, date, document_class)>
<!ELEMENT document_header (identification_index | (from, to, forward_to*))>
<!ELEMENT identification_index (sender_identification_code, receiver_identification_code, forwarder_iden-
        tification_code?)>
<!ELEMENT sender_identification_code (#PCDATA)>
<!ELEMENT receiver_identification_code (#PCDATA)>
<!ELEMENT forwarder_identification_code (#PCDATA)>
<!ELEMENT from (identification, sender_identification_code)>
<!ELEMENT to ( identification)>
<!ELEMENT forward_to ( identification)>
<!ELEMENT identification (name, contact, address)>
<!ELEMENT name (#PCDATA)>
<!ELEMENT contact (contact_name, contact_email, contact_phone, contact_fax?, contact_URL?)>
<!ELEMENT contact_name (#PCDATA)>
<!ELEMENT contact_email (#PCDATA)>
<!ELEMENT contact_phone (#PCDATA)>
<!ELEMENT contact_fax (#PCDATA)>
<!ELEMENT contact_URL (#PCDATA)>
<!ELEMENT address (address_item?, address_item?, address_item?, Postcode, town, state?, country)>
<!ELEMENT address_item (#PCDATA)>
<!ELEMENT Postcode (#PCDATA)>
<!ELEMENT town (#PCDATA)>
<!ELEMENT state (#PCDATA)>
<!ELEMENT country (#PCDATA)>
<!ELEMENT transaction_number (#PCDATA)>
<!ELEMENT date EMPTY>
<!ATTLIST date day NMTOKEN #REQUIRED
                month NMTOKEN #REQUIRED
                year NMTOKEN #REQUIRED>
<!ELEMENT document_class (document_publisher | document_printer)>

<!-- DOCUMENT_PUBLISHER -->
<!ELEMENT document_publisher (group_publisher_paper)>
<!ELEMENT group_publisher_paper (paper_header, report_request)>
<!ELEMENT paper_header EMPTY>
<!ATTLIST paper_header measurement_unit ( mm | cm | inches ) #REQUIRED
                                        decimal_separator ( point | coma ) #REQUIRED>
<!ELEMENT report_request ( inventory_request*, movement_request*, periodic_movement_request?)>
<!ELEMENT inventory_request ( (paper*,date) | (job_publication_code+, date))>
<!ELEMENT paper (paper_index | paper_item)>
<!ELEMENT paper_index (sender_paper_code, receiver_paper_code)>
<!ELEMENT sender_paper_code (#PCDATA)>
<!ELEMENT receiver_paper_code (#PCDATA)>
<!ELEMENT paper_item (owner_code, paper_code, paper_designation, (paper_colour | paper_white),
        paper_weight, (web | sheet), job_publication_code?, technical_detail?)>
<!ATTLIST paper_item paper_class (newsprint | glossy_art | glossy_art_2_faces | matt_art |
        matt_art_2_faces | half_matt_art_paper | satin_finished_art_paper | art_paper |
        art_paper_2_sides | low_grade_art_paper | low_grade_art_paper_2_sides |
        mechanical_art_paper | mechanical_art_paper_2_sides | lightweight | bulky_woodfree | woodf-
        ree | graded_woodfree | bible | NCR_paper | fancy_paper | environment_friendly_paper | art-
        card_coated | artcard_coated_2_sides | grey_board | Bond | Coated_text_book_offset | Cover |
        Index | Tag | Bristol | Newsprint) #REQUIRED
                recycled (yes | no) "no"
                unit_control ( sheets |  kg | ream | thousand_sheets | Linear_meter ) #REQUIRED>
<!ELEMENT owner_code (sender_owner_code, receiver_owner_code?)>
<!ELEMENT sender_owner_code (#PCDATA)>
<!ELEMENT receiver_owner_code (#PCDATA)>
<!ELEMENT paper_code (sender_paper_code, receiver_paper_code?)>
<!ELEMENT paper_designation (#PCDATA)>
```

```
<!ELEMENT paper_colour (#PCDATA)>
<!ELEMENT paper_white EMPTY>

<!-- PAPER_WEIGHT -->
<!ELEMENT paper_weight (metric_system | basis_weight | M_weight)>
<!ELEMENT metric_system (grammage)>
<!ELEMENT grammage (#PCDATA)>
<!ATTLIST grammage grammage_unit  CDATA #FIXED "GSM">
<!ELEMENT basis_weight (paper_class, basis_weight_value)>
<!ELEMENT basis_weight_value (ream_weight_value | thousand_sheets_weight_value )>
<!ELEMENT ream_weight_value (#PCDATA)>
<!ATTLIST ream_weight_value ream_weight_unit CDATA #FIXED  "lb">
<!ELEMENT thousand_sheets_weight_value (#PCDATA)>
<!ATTLIST thousand_sheets_weight_value thousand_sheets_weight_unit CDATA #FIXED  "M">
<!ELEMENT paper_class (Bond | Coated_text_book_offset | Cover | Index | Tag | Bristol | Newsprint)>
<!ELEMENT Bond EMPTY>
<!ATTLIST Bond basic_size CDATA #FIXED "17x22">
<!ELEMENT Coated_text_book_offset EMPTY>
<!ATTLIST Coated_text_book_offset basic_size CDATA #FIXED "25x38">
<!ELEMENT Cover EMPTY>
<!ATTLIST Cover basic_size (20x26 | 22.5x35) "20x26">
<!ELEMENT Index EMPTY>
<!ATTLIST Index basic_size CDATA #FIXED "25.5x30.5">
<!ELEMENT Tag EMPTY>
<!ATTLIST Tag basic_size CDATA #FIXED "24x36">
<!ELEMENT Bristol EMPTY>
<!ATTLIST Bristol basic_size CDATA #FIXED "22.5x28.5">
<!ELEMENT Newsprint EMPTY>
<!ATTLIST Newsprint basic_size CDATA #FIXED "24x36">
<!ELEMENT M_weight (paper_class, M_weight_value)>
<!ELEMENT M_weight_value (#PCDATA)>
<!ATTLIST M_weight_value M_weight_unit CDATA #FIXED  "lb">
<!-- END_PAPER_WEIGHT-->

<!ELEMENT web (width, reel_diameter?, reel_number?)>
<!ELEMENT sheet (height, width)>
<!ATTLIST sheet grain_direction (height | width) "height">
<!ELEMENT height (#PCDATA)>
<!ELEMENT width (#PCDATA)>
<!ELEMENT reel_diameter (#PCDATA)>
<!ELEMENT reel_number (#PCDATA)>
<!ELEMENT technical_detail (thickness?, brightness?, bulk?, tensile_index?, tear_index,
            bursting_strength?, stiffness?, fold_resistance?, opacity?, gloss?, porosity?, hydrometry?,
            rugosity?)>
<!ELEMENT thickness (#PCDATA)>
<!ELEMENT brightness (#PCDATA)>
<!ATTLIST brightness type CDATA #REQUIRED>
<!ELEMENT bulk (#PCDATA)>
<!ELEMENT tensile_index (#PCDATA)>
<!ATTLIST tensile_index feel ( long | through ) "long">
<!ELEMENT tear_index (#PCDATA)>
<!ELEMENT bursting_strength (#PCDATA)>
<!ELEMENT stiffness (#PCDATA)>
<!ELEMENT fold_resistance (#PCDATA)>
<!ELEMENT opacity (#PCDATA)>
<!ELEMENT gloss (#PCDATA)>
<!ELEMENT porosity (#PCDATA)>
<!ELEMENT hydrometry (#PCDATA)>
<!ELEMENT rugosity EMPTY>
<!ATTLIST rugosity side (tick | felt) #REQUIRED>
```

# Appendix B - printml_paper.dtd

```
<!ELEMENT job_publication_code (publisher_code, printer_code)>
<!ELEMENT publisher_code (#PCDATA)>
<!ELEMENT printer_code (#PCDATA)>
<!ELEMENT movement_request (job_number | (job_publication_code, first_mvt_date, last_mvt_date) |
        (movement_request_type*, paper*, first_mvt_date, last_mvt_date))>
<!ELEMENT job_number (publisher_code, printer_code)>
<!ELEMENT movement_request_type EMPTY>
<!ATTLIST movement_request_type type (supplier_receipts | supplier_returns | paper_consumption | positi-
        ve_adjust | negative_adjust | internal_move | transfer_paper | transformation_input | transfor-
        mation_output) #REQUIRED>
<!ELEMENT first_mvt_date EMPTY>
<!ATTLIST first_mvt_date day NMTOKEN #REQUIRED
                                    month NMTOKEN #REQUIRED
                                    year NMTOKEN #REQUIRED>
<!ELEMENT last_mvt_date EMPTY>
<!ATTLIST last_mvt_date day NMTOKEN #REQUIRED
                                    month NMTOKEN #REQUIRED
                                    year NMTOKEN #REQUIRED>
<!ELEMENT periodic_movement_request EMPTY>
<!ATTLIST periodic_movement_request periodicity (weekly | monthly | quaterly | yearly) #REQUIRED>

<!-- DOCUMENT_PRINTER -->
<!ELEMENT document_printer (group_printer_paper)>
<!ELEMENT group_printer_paper (paper_header, inventory_list*, movement_list*)>
<!ELEMENT inventory_list (paper_list_item | (job_publication_code, paper_list_item*))>
<!ELEMENT paper_list_item (paper, quantity, unusable_paper_quantity?,plant_allocation_detail*)>
<!ELEMENT quantity (#PCDATA)>
<!ELEMENT unusable_paper_quantity (#PCDATA)>
<!ELEMENT plant_allocation_detail (quantity)>
<!ATTLIST plant_allocation_detail plant_code CDATA #REQUIRED>
<!ELEMENT movement_list ((job_publication_code, movement_item+) | (job_number, paper,
        movement_detail+) | movement_item)>
<!ELEMENT movement_item (paper,(quantity, unusable_paper_quantity?, first_mvt_date)?,
        movement_detail+, (quantity, unusable_paper_quantity?, last_mvt_date)?)>
<!ELEMENT movement_detail ( movement_type, date, quantity, remarks?)>
<!ATTLIST movement_detail plant_code CDATA #IMPLIED>
<!ELEMENT movement_type (supplier_receipts | supplier_returns | paper_consumption | positive_adjust |
        negative_adjust | internal_move | transfer_paper | transformation_input | transformation_out-
        put)>
<!ELEMENT supplier_receipts (( supplier_code | supplier_name)+)>
<!ELEMENT supplier_code (#PCDATA)>
<!ELEMENT supplier_name (#PCDATA)>
<!ELEMENT supplier_returns ((supplier_code | supplier_name)+)>
<!ELEMENT paper_consumption (job_number, job_title, job_publication_code?)>
<!ELEMENT job_title (#PCDATA)>
<!ELEMENT positive_adjust EMPTY>
<!ELEMENT negative_adjust EMPTY>
<!ELEMENT internal_move (#PCDATA)>
<!ELEMENT transfer_paper (#PCDATA)>
<!ELEMENT transformation_input (#PCDATA)>
<!ELEMENT transformation_output (#PCDATA)>
<!ELEMENT remarks (#PCDATA)>
```