Electronic AIP User's Manual

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Executive Summary

The Electronic AIP (eAIP) Specification developed by EUROCONTROL provides a standard way to:

- publish the content of an AIP (including AIP Amendments (AMDT), AIP Supplements (SUP) and Aeronautical Information Circulars (AIC)) in a structured electronic format;

- visualise the content of an AIP on a computer screen, using Web technology.

Through the use of the eXtensible Markup Language (XML), the eAIP data content is completely separated from its presentation, which, in turn, may be tailored to support every target media. The on-screen (HyperText Markup Language (HTML)) presentation part of the eAIP Specification was validated with a group of real users. In addition to the standard HTML browsing features (hot links, tool tips, etc.), it provides the capability to visualise changes, both in the text and the graphics.

An important advantage of an AIP in electronic format is that an eAIP can be made available to an increased number of users. In contrast to a paper document, whereby the consultation is restricted by the number of copies available and by their location, an eAIP can be made available to a much wider audience and even the whole company through the use of an intranet.

This manual complements the eAIP Specification by providing detailed instructions for **eAIP users**. It covers topics such as browsing and printing the eAIP. The eAIP User's Manual also contains instructions for the use of the eAIP Specimen provided by EUROCONTROL.

Chapter 1. Introduction

1.1. General

Within this document, the term "eAIP" is used in order to refer to an Electronic AIP produced in accordance with the EUROCONTROL eAIP Specification.

This Manual is intended to cover general usage instructions applicable to any eAIP. In addition, it provides usage instructions which are specific to the eAIP Specimen provided by EUROCONTROL.

The on-screen (HTML) presentation part of the eAIP Specification was validated with a group of real users, in the form of a Usability Study [usability_study.pdf].

Some of the most important advantages for users of an eAIP are listed below:

- ease of browsing, facilitated by the HTML technology (hot links, tool tips, etc.);

- the ability to clearly visualise changes (both in the text and the graphics);

- no maintenance effort (no time spent on page replacement for every amendment);

- can be made available for the whole company (no need to go to the library);

- no postal delays (if distributed through the Internet).

1.2. File Formats

Through the use of the XML, the eAIP data content is completely separated from its presentation, which, in turn, may be tailored to support every target media. While the capability to fine-tune the eAIP presentation to support every media (paper, CD-ROM, Web, etc.) is an advantage for the users, it poses a challenge for the producers. The producers must ensure consistency between the different formats.

As a minimum, users should expect to obtain the eAIP in three formats: XML, HTML (for browsing) and Portable Document Format (PDF) (for printing). The most common reference format is XML. However, the reference format may vary depending on the legislation in force in the issuing State and/or the user's State. Before using the eAIP for operational purposes, the user shall clarify with the issuing organisation which of the formats should be considered as prevailing in case of discrepancies between the different formats.

1.2.1. XML

An eAIP in XML format comprises files with the extension ".xml" and graphical files, which are typically located in a "graphics" directory. The XML format is not intended for browsing as it does not contain formatting information. The main role of the XML format is to provide the reference data. It is probable that the other formats are derived from the XML source files, through the use of stylesheets. However, it is also possible that only the HTML format is produced from the XML format, while both the XML and the PDF formats are produced from another source, which is not distributed as part of the eAIP.

1.2.2. HTML

The HTML format of the eAIP is intended for browsing. It comprises files with the extension ".html", graphical files, stylesheet files (".css") and java script files. The same graphical files are usually common to the XML and the HTML formats and are located in the "graphics" directory.

It is likely that most users will reference the content of an eAIP through an HTML browser, which is designed to facilitate on-screen consultation.

1.2.3. PDF

The PDF format is used if the eAIP is intended for printing and consists of files with the extension ".pdf". All graphics are embedded within the PDF files. The PDF files shall entirely conform to the International Civil Aviation Organisation (ICAO) Standards and Recommended Practices (SARPs) with regards to the AIP content and structure. If the issuing State also distributes a paper AIP, the pages of the PDF format shall be identical in terms of content and format to the pages of the paper AIP.

1.3. Distribution Media

The eAIP may be made available on-line, through the use of the Internet, a company intranet or another file-sharing enabled network. It may also be made available off-line, through distribution on physical media such as a CD-ROM.

One of the main differences between an eAIP and a paper AIP, is that the eAIP is made available as a complete document. For every Aeronautical Information Regulation and Control (AIRAC) cycle, a complete eAIP shall be issued. No effort has to be spent by the user on the fastidious page replacement exercise imposed by the paper AIP amendment procedure.

1.3.1. Effective Date

It is probable that, whichever the distribution media used, several temporal versions are made available. As a baseline, the user shall expect to have access to:

• the current effective version (the effective date is either before or equal to the current date);

• the next effective version (the effective date is after the current date).

The publication and effective dates of an eAIP shall comply with the ICAO SARPs. Issues of the eAIP that contain operationally significant changes shall be published in accordance with the AIRAC cycle requirements.

The user shall ensure that he/she is browsing the appropriate version.

It is possible that the eAIP producer may have included a warning mechanism, for example as a pop-up message, which warns the user if he/she is accessing a version which is not the currently effective one. The accuracy of such warnings depends on the date setup of the user's computer and, therefore, may not be entirely reliable.

Chapter 2. eAIP Browsing

2.1. Introduction

The content of this chapter is relevant to using a HTML browser in order to consult the content of an eAIP in HTML format.

The eAIP may be presented on two different media - on paper and on the screen. Presenting the information on a computer screen and presenting the same information on paper have different constraints. XML and HTML are Web technologies, developed specifically to display information on computer screens. The on-screen (HTML) presentation part of the eAIP Specification was validated with a group of real users, in the form of a Usability Study [usability_study.pdf].

It is probable that most users will consult the content of an eAIP through the use of a HTML browser. Occasionally, a user may need to print parts of the eAIP and shall use the PDF format for this purpose. HTML is the preferred format for consulting an eAIP dues to its enhanced capabilities, such as:

• Pop-up hints;

• The presentation of dynamic content (for example, annotations with Notice to Airmen (NOTAM));

• The ability to view changes on demand.

There are some differences between these:

• An A4 sheet of paper, which is the typical AIP format, printed with a 300 dpi printer has a width of approximately 2400 pixels;

• A typical computer screen has 1024 pixels, which is half of the width of the A4 paper. For the text to remain legible, the length of a text line shall be reduced by at least one third when compared with A4 paper.

On the other hand, the concept of fixed length pages does not apply to the computer screen. For electronic presentation, it is more natural to group the information in chapters, per subject.

2.2. eAIP History

An eAIP consists of a set of eAIP/eSUP and eAIC files which are issued collectively on a common publication date. Typically, Aeronautical Information Services (AIS) websites featuring eAIPs shall present the eAIPs history on the "start page", for all eAIPs. This history page shall list all eAIPs already published. The first eAIP listed shall be the currently effective one[1], followed by any eAIP already published but not yet effective. Finally, expired eAIPs shall be listed as well. The screenshot below shows the history page of EUROCONTROL's eAIPs specimen.

For each eAIP listed, a link shall be provided through its effective date, which links to the eAIP cover page, displayed within the full HTML interface.

eAIPs provided on CD-ROM may include this history page as well, although with fewer eAIPs listed. At least two eAIPs will be listed, the current and next AMDT and any AICs and SUPs from previous eAIPs which are still active.

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[1]Users should nevertheless check the effective date, to be sure that they are browsing the correct document.

Note

This feature is not available within the European AIS Database (EAD)/Published AIP Management System (PAMS). PAMS provides its own way of accessing expired eAIPs.

2.3. Cover Page

The cover page is the default start page of a given eAIP. It displays the publication and effective dates, and content description provided by the publisher.
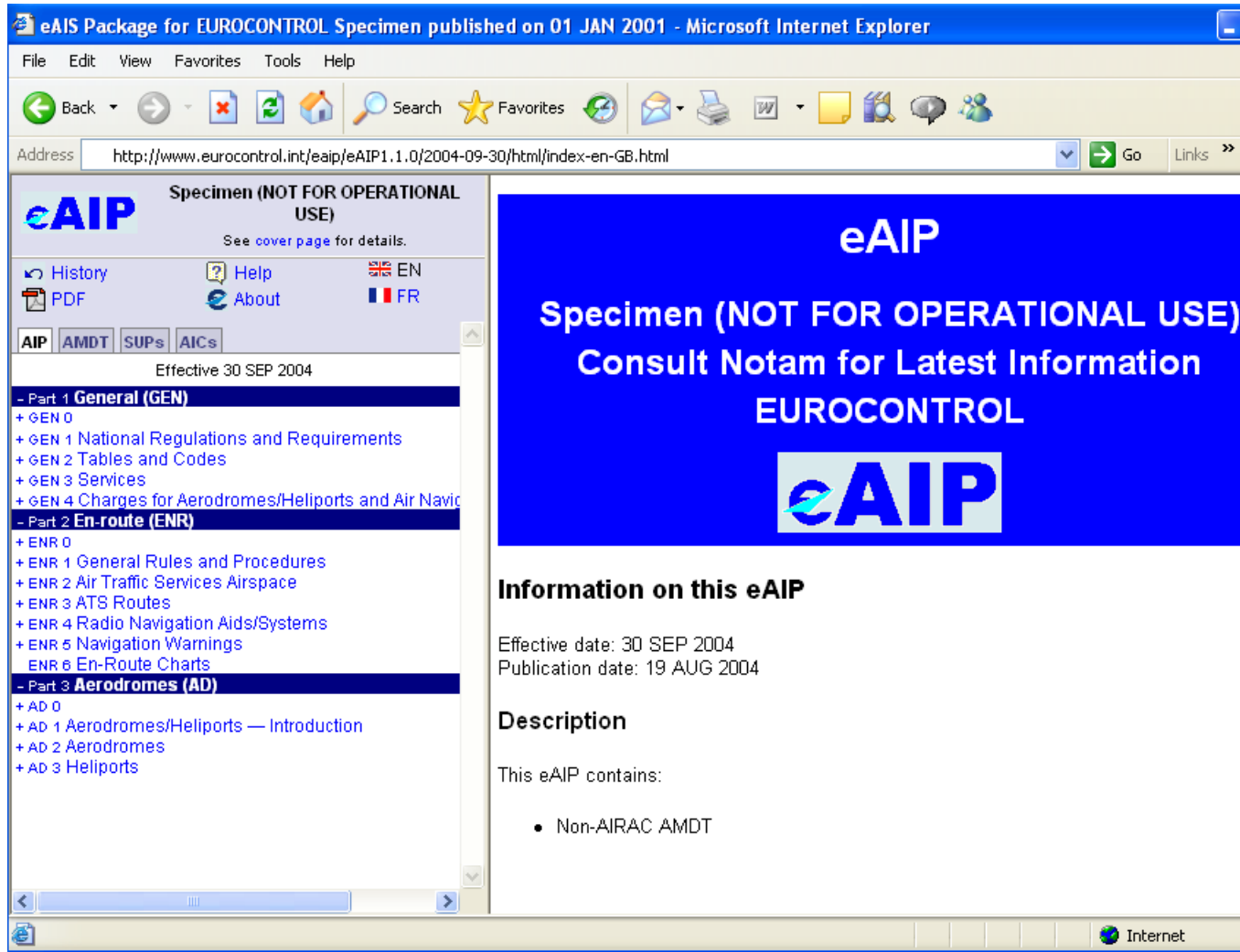
2.4. Menu

The eAIP Menu is shown below and shall include the following details:

1   Logo of publishing organisation or national flag(s);
2   State(s);
3   Link to this eAIP's cover page;
4   Link to list of past, current and future AMDTs (not available within EAD/PAMS;[2]);
5   Link to current page in PDF format (not available within EAD/PAMS;[3]);
6   General help information about the eAIP;
7   Country / organisation information about this eAIP and logo;
8   Links to current page in other languages, if available.

2.4.1. AIP Tab

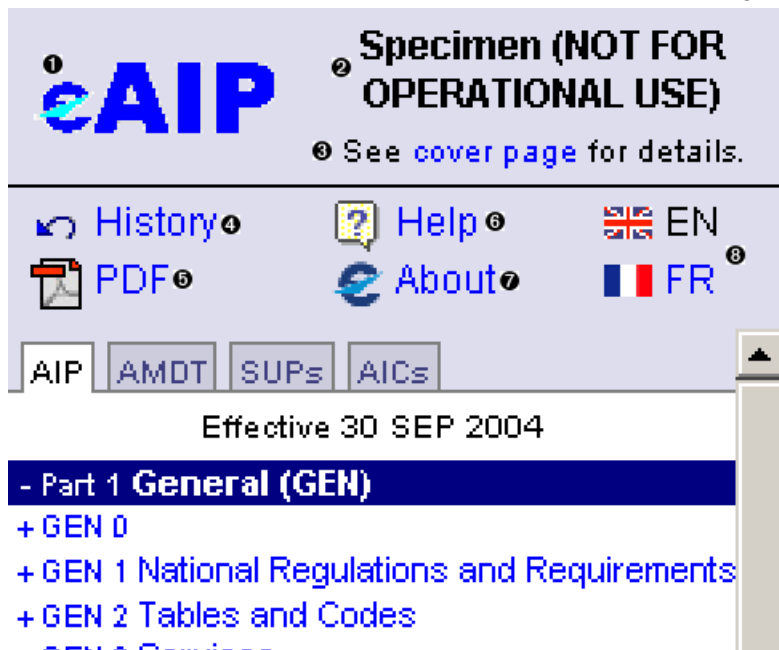The AIP tab shall contain the table of contents of the full AIP published within the current eAIP. If the eAIP does not contain any Amendments, the latest published AIP shall be used.

The following methods may be used to navigate the information on the AIP Tab:

• clicking on a "+" or "-" sign to show or hide a sub-level of section titles;

• clicking on a title to navigate to the relevant section in the eAIP window.

The effective date of the full AIP issue shall be visible at the top of the table of contents. This shall also be the effective date of the eAIP.

2.4.2. AMDT Tab

In contrast to a paper AIP, the concept of page replacement is not applicable to the eAIP. Instead, the AMDT tab shall contain links to every change in the AIP. If the current eAIP does not contain an Amendment, the list of changes shall be empty.

Changes forming an amendment shall be grouped. AIRAC groups are shaded blue and non-AIRAC groups are shaded pink. Each group has a title and description. Within a group, changes are grouped by chapters and within chapters, by sub-section titles. Each change is indicated by a blue triangle.

Each change shall feature:

• a link to the exact location in the AIP where the change has been made;

• the exact location shall be surrounded by a red border.

• ~~the title of the closest enclosing (sub-)section;~~

• ~~brief comments from AIP editors regarding the change.~~

Note

Editors shall not normally comment on each individual change: one comment shall typically apply to a group of small closely related changes.

For route tables, changes are grouped by route segment or significant point.

The effective date of this list of changes shall be visible at the top of the list. This shall also be the effective date of the eAIP.

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[2]EAD/PAMS provides its own way of accessing expired eAIPs.
[3]EAD/PAMS provides its own way of accessing PDF files.

2.4.3. SUPs Tab

The SUPs tab shall list currently published AIP Supplements. For each Supplement, the following information shall be indicated:

• Number;

• Year;

• AIP sections affected;

• Period of validity;

• Subject.

The publication date of this list of Supplements shall be visible at the top of the list. This is also the publication date of the eAIP.

2.4.4. AICs Tab

To gain access to the currently published AICs the user shall click on the AICs tab.

The publication date of this list of Circulars shall be visible at the top of the list. This shall also be the publication date of the eAIP.

2.5. Amendments

When selecting the AMDT tab and highlighting a particular amendment, the AIP section shall have a check box in the top right corner, which shall allow the user to select whether to graphically display the changes in the AIP. The user shall tick (✔   )
this check box to display differences between current and previous version of the visible AIP section.
Note

"current version", refers to the version of the AIP which is open, and whose effective date is indicated in the table of contents and list of changes. This is not necessarily the currently effective AIP.

The Amendments shall be interpreted in the following way:

• First the "Show Amendments" shall be ticked (✔   );

• Inserted text blocks shall have a light shade of pink or blue background;

• Deleted text blocks shall have a darker shade of pink or blue background and shall be struck-through;

• Pink shades shall denote AIRAC Amendments, while blue shades indicate non-AIRAC ones;

• Placing the mouse pointer over changed text shall display its effective date.
  Note

  There may be no change in the section being consulted even if "Show Amendments" is ticked.

2.6. SVG Charts and Graphics

It is recommended that all eAIP graphics be made available in SVG format. SVG format offers very high quality displays and printing, with the capabilities to zoom and pan, to search for text, etc. File sizes are typically smaller than for an equivalent graphic in raster format. In addition, it is possible to add "script functions" to the Scalable Vector Graphics (SVG) file, which allows for a large number of enhancements to be made. For example, it is possible to show the differences between the current and the previous version of a chart.

To use an SVG chart:

• Install a "plugin" to the browser, for example, the Adobe SVG Viewer (see Adobe's downloads page [http://www.adobe.com/support/downloads/main.html]);

  Note: *only the functionality specific to the Adobe SVG Viewer 3.0 plug-in will be described below; at the time of the writing, it was the most widely used SVG viewer and the only one which has been tested within the eAIP Project.*

• **Zoom in**: press the "Control" key and click with the left (normal) mouse button; alternatively, drag the mouse (i.e. press normal mouse button, move mouse and then release button) to define a rectangle in which to zoom;

• **Pan**: press the "Alt" key and drag the mouse;

• Additional, standard SVG commands are available on the right-mouse click menu (zoom in, zoom out, search text, etc.).

2.7. Other Features

Other navigation and browsing features may be available, such as "Hint" text for abbreviations and location indicators, internal links, content of remarks included by reference, etc. Some of these are presented as part of the eAIP Specimen chapter.

Chapter 3. eAIP Printing

3.1. Introduction

The eAIP, as distributed by an AIS Office, should include a printable version. If the AIS Office is also distributing a paper version of the AIP, the printable version of the eAIP shall be of the same presentational format and content as the paper version distributed.

This chapter is intended to provide assistance on printing an eAIP in order to obtain a paper AIP which is the same format as the paper version distributed by the AIS office.

3.2. Standard eAIP in PDF

The printable format typically used by AIS Offices is PDF. An eAIP in PDF format shall comprise a number of files:

- Full AIP: 77 PDF files (one file per section, e.g. GEN 1.2 level), plus one file per aerodrome and heliport;

  A typical name for such a file is "EC-ENR-3.1-en-GB.pdf", where:

  - the prefix "EC" indicates the issuing State (by its ICAO Country Code);

  - "ENR-3.1" indicates the AIP section;

  - the suffix "en-GB" indicates the language. The language tag is composed of an International Organisation for Standardisation (ISO) language code (ISO 639) and a mandatory ISO country code (ISO 3166), separated by a dash ('-').

- "Paper Amendment": one PDF file containing each amended page, for a given amendment;

- AIP SUP and AIC files: one PDF file for each Supplement and AIC.

All charts and other graphics shall be included in one of these PDF files. It is possible that some AIS offices will split some large files (typically, aerodromes) into a smaller number of files.

If needed, it is possible to merge all section and aerodrome files into a single PDF file.

3.3. Printing PDF Files

A few points that may be useful when printing AIP PDF files are included below:

3.3.1. Recto-verso Printing

It is probable that the eAIP in PDF format will be printed in recto-verso. Margins, page numbering, charts and "intentionally blank" pages are examples where recto-verso printing is important.

If your printer does not support recto-verso printing automatically, it can be performed manually in the following way:

1. Print only odd pages;

2. Put the printed odd pages in your printer's in-tray, so that the blank sides will be printed on;

3.   Print only even pages (possibly in reverse order, depending on your printer).

3.3.2. Fitting Content on Paper

PDF browsers like Adobe Acrobat Reader can adapt the content's size to the paper size used. However, using another paper size than the one for which the PDF file was created will result in charts not being printed at the correct scale.

It may be possible in the Print dialog window to shrink over sized pages or expand small pages so that they fit the paper size, as illustrated by the screen shot below.
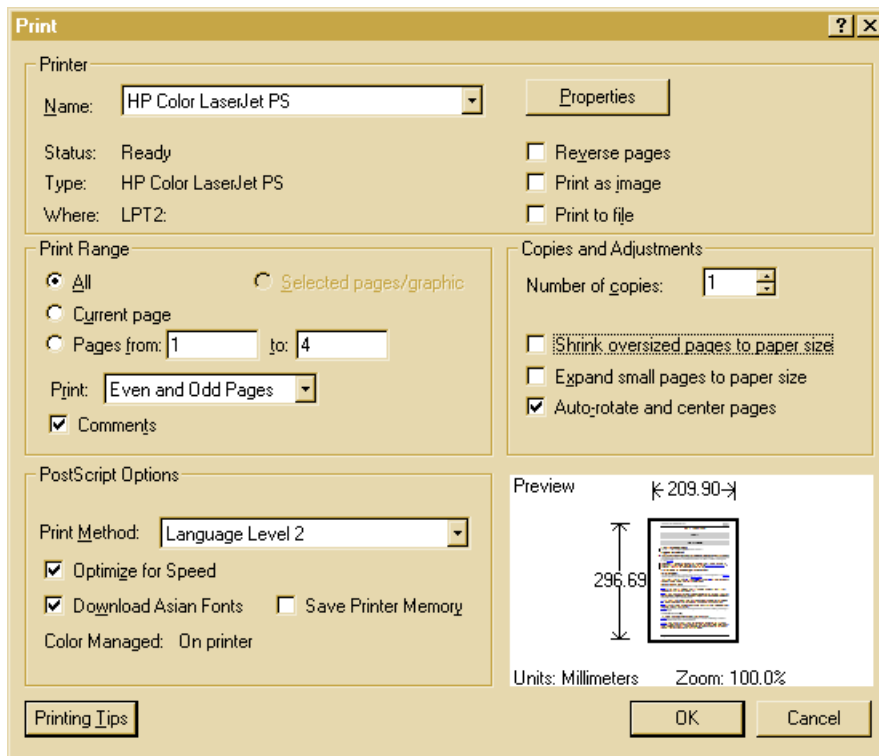
In this screen shot, both of these options are not selected. Depending on the printer used, it may be necessary to shrink oversized pages to the paper size to slightly reduce the size of the printing area. While this has virtually no affect on text pages, it may affect the chart's scale, sometimes significantly, as explained below.

3.3.3. Using Different Paper Sizes

A typical AIP will contain charts in various sizes. The standard eAIP layout provided as part of the EUROCONTROL eAIP Specimen uses two different paper sizes: A4 portrait (29.7cm high and 21cm wide) and A3 landscape (29.7cm high and 42cm wide). The stylesheets may be customised to allow other sizes as well. For example, it may be intended that aerodrome obstacle charts be printed on 29.7 by 82cm paper or even larger. But in general, an eAIP in PDF format shall only contain common paper sizes, such as A4 and A3.

If you print a whole PDF file, containing more than one paper size, in one action, then all pages will be printed on the one paper size selected in the printer settings dialog.

To print pages in their intended size there are two options: selecting pages manually or using PostScript.

3.3.3.1. Manual Paper Size Selection

To specify the paper size for selected pages manually, the normal procedure is to specify in the Print Dialog window that the Print Range applies to the selected pages and to then select the required paper size through the printer properties.

3.3.3.2. Using PostScript

Most PostScript printers allow selection of a different paper tray within the document. PostScript instructions shall be added to a given page in the document to select a different "page device". Contact should be made with the AIS office in order to check if they can provide their eAIP in PostScript format.

3.3.4. Paper Orientation Issue

All pages in a PDF format eAIP are normally intended to be printed in the same paper orientation. That is, all text pages should be printed in portrait orientation (taller than wide), with, quite naturally, page headers appearing at the top and footers at the bottom of the page.

Similarly, with A3 landscape pages should appear as landscape pages (wider than tall) on screen, and should be printed on landscape paper. That way, the headers appear at the top and footers at the bottom.

To print a PDF file with both portrait and landscape pages, however, all pages will be printed on the same type of paper unless the PDF browser is configured to automatically rotate pages when required.

3.4. Converting XML to a Printable Format

If the eAIP provided by an AIS Office includes XML files, it is possible to produce new printable files, maybe in another format such as PostScript. Note, however, that it will be very difficult to obtain the same printed result as the printable files provided by the AIP office. This is because each AIP publisher may customise the formatting of their paper AIP.

With good knowledge of XML, Extensible Stylesheet Language Transformations (XSLT) and Extensible Stylesheet Language Transformations (XSL-FO), EUROCONTROL's style sheets may be adapted or new ones created to print a different document, using eAIP data. Of course, the resulting document is no longer the original AIP and the user is entirely responsible for its use. Please note that such actions may be explicitly restricted by the copyright policy of the AIS Office producing the eAIP or by the safety regulations in the user's State.

3.5. Printing HTML Files

The eAIP in HTML format is not intended to be printed. It can be printed but the result will be very different to a paper AIP, or an eAIP in PDF format. For instance, printed HTML will not show the effective date on the pages: only the effective date of the latest amendment (in the HTML page title, if it is printed).

Chapter 4. Guide to the eAIP Specimen

The eAIP samples were developed by EUROCONTROL in order to test the eAIP Specification and to demonstrate some of its capabilities. Its data content is entirely fictitious and is based on the ICAO Specimen AIP, as included in ICAO Doc 8126 - AIS Manual. There are six specimen eAIPs in total. These are available for download from the EUROCONTROL eAIP website. The specimen included with the eAIP documentation is example 2, 2004-07-08-AIRAC.

4.1. Six Samples

The eAIP samples contain different content, to illustrate the possible compositions of eAIPs.

Table 4.1. eAIP Samples

Directory	Content
2004-06-10-AIRAC	Initial eAIP issue
2004-07-08-AIRAC	AIRAC AMDT, 2 Supplements, 2 Circulars
2004-08-05	1 Supplement
2004-09-02	1 Circular
2004-09-30	Non-AIRAC AMDT
2004-10-28	1 Supplement cancelled

4.2. Features

4.2.1. Navigation and Tool Tips

- "Hint" text for **abbreviations** and **location indicators**:

  - Placing the mouse pointer over certain indicators will display the name of the location (for example, within the AD 2.x titles);

  - Placing the mouse pointer on abbreviations displayed in "small caps" will display the definition.

- Internal links:

  - From 0.6 (ToC) sections to various sections;

  - Textual references, for example, in GEN 0.1;

  - From ENR 4.3 (designated points) to the routes where the points are used;

  - From GEN 2.4 to the aerodromes or heliports.

- Remarks: if the mouse is placed over references in the ENR 3.x route tables, remarks will be displayed (ex: [1])

4.2.2. Amendments

The Specimen contains many fictitious amendments, notably in GEN 0.1 [../../html/EC-GEN-0.1-en-GB.html], GEN 1.1 [../../html/EC-GEN-1.1-en-GB.html], GEN 2.4 [../../html/EC-GEN-2.4-en-GB.html], GEN 3.1 [../../html/EC-GEN-3.1-en-GB.html], ENR 3.1 [../../html/EC-ENR-3.1-en-GB.html], ENR 3.2 [../../html/EC-ENR-3.2-en-GB.html], ENR 3.3 [../../html/EC-ENR-3.3-en-GB.html], ENR 4.1 [../../html/EC-ENR-4.1-en-GB.html], ENR 4.3

[../../html/EC-ENR-4.3-en-GB.html], ENR 6 [../../html/EC-ENR-6-en-GB.html], AD 2 EADZ [../../html/EC-AD-2.EADZ-en-GB.html], AD-2.EAZZ [../../html/EC-AD-2.EAZZ-en-GB.html].

4.3. PDF Format

The samples are not provided with any PDF files for size reasons. The PDF files are available on EUROCONTROL's eAIP website [www.eurocontrol.int/eaip]. [www.eurocontrol.int/eaip]

4.4. Limitations

4.4.1. System Requirements

The eAIP samples have been tested with Internet Explorer 5.5 or later with Adobe SVG Viewer 3.0 plug-in. Other browsers such as FireFox and Netscape 7 will work, but visualising SVG graphics will be restricted by the availability of an appropriate SVG viewer plug-in.

4.4.2. Graphics

It is recommended that the graphics included in the eAIP are made available in SVG format. For technical reasons, most of the graphics included in the ICAO Specimen AIP were only available in raster format. For examples of graphics in SVG format, please see ENR 6 - En-route charts [../../html/EC-ENR-6-en-GB.html].

4.4.3. Language

The sample eAIP named 2004-09-30 simulates a dual-language eAIP (in HTML only). From the AIP, only sections titles have been translated, not the AIP text itself. The eAIP interface has been translated into French, however. This simulation illustrates the management of documents in two languages.

Appendix A. Glossary

AIC	Aeronautical Information Circular
AIM	Aeronautical Information Management
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information Regulation and Control
AIS	Aeronautical Information Services
AMDT	AIP Amendment
EAD	European AIS Database
eAIP	Electronic AIP
HTML	HyperText Mark-up Language
ICAO	International Civil Aviation Organisation
ISO	International Organisation for Standardisation
NOTAM	Notice to Airmen
PAMS	Published AIP Management System
PDF	Portable Document Format
SARPs	Standards and Recommended Practices
SUP	AIP Supplement
SVG	Scalable Vector Graphics
XML	Extensible Markup Language
XSL-FO	Extensible Stylesheet Language - Formatting Object
XSLT	Extensible Stylesheet Language Transformations