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**Technical Specifications  
for the production of  
Material in Digital Formats**

Version 1.2

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Rome, 10.5.02

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## **1. Introduction**

This document is designed to provide useful guidelines for sending digital material to the layout department in the most reliable way. The following remarks regard all the types of documents: advertisements, tables, artwork and so on.

The chosen format for our purposes is Acrobat PDF and the reasons for this choice are described below. Further on we will specify our criteria for the creation of the above-mentioned documents in order to achieve the maximum probability of success in printing results.

## **2. Why a PDF document?**

Various programs are available to create materials to be printed. Some of these programs offer many advantages but normally only for certain functions, some other ones offer advantages for other kinds of functions. Most of the time, the greatest advantage of all can be simply the single user's knowledge or the knowledge of the whole department's personnel regarding a specific methodology.

These programs place a great quantity of tools at your disposal to satisfy your designer's creativity. For the same reason they allow you to use an enormous number of fonts of different types.

In the printing world, there has always been a greater availability on the Macintosh platform, but later the Windows world quickly regained ground. In this way we can obtain the desired results basis upon our necessities, our knowledge and using the available resources.

The alternative is that a document created on a certain platform with a certain version of a certain program and using certain fonts is not completely compatible if one of the above-mentioned items is changed.

In order to avoid this it is often sufficient to follow certain specific guidelines to increase a document compatibility, but at other times a fair amount of specialised work and skill is necessary to obtain the desired results.

Almost all programs require the fonts used to be attached to the document but this procedure does not guarantee complete compatibility and is illegal. Last but not least, we can consider the RIP as a further variable as the RIP transforms the document into commands for output devices, Image setter or Computer To Plate.

Adobe has developed the PDF file (it stands for Portable Document Format) to solve most of these problems. As the name suggests, the main objective of this format is just to guarantee document reproducibility with all processing and printing platforms.

Before Adobe developed the PDF version 1.3 (related to Acrobat 4) we could not use the previous format for all printing processes e.g. it was not possible to incorporate CMYK 4-colour images.

Due to this inconvenience in the program different systems were born. They tried to create a self contained EPS file even with included fonts. This system was not, and it is still not, as standard and reliable as the PDF has become.

Nowadays, a PDF offers numerous advantages:

- The fonts can be all included into the document in order to resolve compatibility problems. It is impossible to extract the fonts and therefore there are no license agreement breaches.
- The document is fully compatible with all the most widespread hardware and software platforms.
- All necessary printing process data, i.e. images, fonts etc. are stored in a single file.
- Each component of the document is compressed one by one using the most efficient algorithm for each. As a consequence, the resulting file is the smallest possible enabling you to save a lot of time and to save on transmission costs.
- A PDF document does not have any programming commands, on the contrary the PostScript format does. This fact guarantees a very high reliability of execution by the RIP.
- PDF files give the maximum speed of execution and printing with the maximum quality.
- It can be easily converted in other formats.
- Many PDF controlling (“pre-flight”), editing and conversion tools are available on the market.

### 3. Rules for Material Preparation

Unfortunately even with a PDF file the different possibilities made available in different environments do not eliminate the risk that the final result may not be the one you expected while creating it or that the document cannot be interpreted by some types of RIP.

This document is designed to provide useful guidelines to guarantee maximum possible success and therefore you should follow the following rules.

#### 3.1. Document construction

You can obtain a fully portable PDF with a guarantee of final success following these recommendations commencing even from layout stage:

##### 3.1.1. Images

- All images must be high resolution (not OPI).
- Resolution images need the following settings: 150 dpi for colour and grey scale; 1200 dpi for line art and bitmap.
- Images have to be processed in the proper way by a suitable program and you must not process images inside a layout system.
- Image should be scanned at an appropriate resolution considering possible resizing.
- Colour images must be CMYK 4-colours.
- The printing processes work according to the so-called "Eurostandard newsprint" specifications, consequently the separation tables in CMYK colours have to consider normal printing dot-gain curves (30% of gain @ 50% screening). The normal recommended separation process is the GCR method with a total ink coverage of 240-260%.
- Black and white images must be in grey scale.
- It is strongly recommended that DCS image documents made by a copy dot scanner should be avoided. If this cannot be avoided the materials must be send much earlier than other documents in order that they be fully tested in the production flow.

##### 3.1.2. Fonts

- Do not use artificial style fonts.
- Use Type 1 PostScript fonts if possible.
- Avoid TrueType fonts if possible.
- All fonts must be included and complete.

### 3.1.3. Others

- Boxes must be built using appropriate tools and you must not draw them as four separate lines.
- Colour areas density must be between 5% and 95%.
- You must not use Pantone colours, RGB colours or “special” colours of any kind for backgrounds, lines, boxes, text, etc.. All colours must be converted into CMYK colours with the above-mentioned parameters.
- Screen frequency must be 85 lpi.
- The four separation screen angles should be the classical values:
  - Black 45°
  - Magenta 75°
  - Yellow 90°
  - Cyan 105°.
- Unnecessary elements such as blank pages (without images and text) must be removed.
- Do not use “multi-page” documents. Every document needs to contain only pages or modules with its own related name.
- Information on trapping, knock-out and overprinting must be properly set during layout.
- Very thin lines or very small typefaces must be designed with a single colour to reduce register problems. The lower limit of legibility should be increased in presence of negative lettering especially if there is a four-colour background.
- Current literature suggests to not go under the following limits in order to guarantee good quality documents:
  - 4 points for four-colour lines
  - 7 points for four-colour types without serifs
  - 12 points for four-colour types with serifs
  - 14 points for four-colour types with very delicate serifs such as a Bodoni typeface.
  - 12 points for reverse fonts on a four-colour background.
  - 10 points for reverse fonts on a one colour solid.
  - 12 points for types with serifs in reverse font on any background.
- Avoid as much as possible very heavy vector information such as shading with an exceedingly high number of levels or extremely complex clipping paths (number of nodes greater than a few thousand).
- Avoid the “nesting” of EPS documents (i.e. an EPS document which includes another EPS document).

- If you need to pass boxes between two pages you should create them with simple colours to guarantee printing uniformity.

### **3.2. Building a PDF file**

- Because of the fact that materials will be placed in a standard page layout, the document must not include registration marks even though it is a whole page document.
- The best way to make a PDF document, as far as quality and repeatability of chosen parameters are concerned, is to configure a virtual printer using the Adobe printing driver. This printing driver is available free on the Adobe website ([www.adobe.it](http://www.adobe.it)) for both Mac and Windows operating systems. You need to use the above printer with a PostScript program (as for all the programs usually needed to make both vector and bitmap documents) to obtain a PostScript file including all necessary elements. Distilling this file with Acrobat Distiller version 4 or 5 you can obtain a PDF file that will grant you perfect portability across different platforms.
- In Appendix A you will find the configuration settings for Acrobat Distiller (version 4 or 5). Layout files corresponding to the recommended parameters (job options) for both Acrobat versions are available on demand.
- Acrobat versions 4.05 or 5.05 are required. Previous versions (4.0, 4.01 or 5.0) produce invalid PDF documents in certain situations.
- In Appendix A there are also some printing configuration examples for Xpress using the Adobe driver.
- A PDF document must be made with Acrobat Distiller with a setting as explained in Appendix A and not with a "PDF Writer".
- No protection must be applied to a PDF file.
- To maintain the above mentioned advantages you need to keep vector information as unchanged as possible into the document and you must not change it into a bitmap document by using programs like PhotoShop.

### 3.3. File format

A PDF file is cross platform by default. The following rules are advisable to maintain compatibility settings:

- Do not compress the file. Further compressions other than the one inside Acrobat is both useless and may not be compatible with all operating systems.
- File name must be “filename.PDF” where “filename” is:
  - no more than 27 letters long (plus the extension letters making a total of 31 letters, the lower limit of all platforms).
  - Composed only of letters, numbers, dashes (-) or underscores (\_) between letters. Punctuation marks or special characters are forbidden as they cannot be accepted by certain file-systems.

## 4. Suitability control

Among PDF document advantages we have mentioned is the possibility to control file validation by requested option parameters.

Enfocus Software PitStop is one of the programs which operates this “pre-flight” control. The “Server Version” enables you to have an automatic workflow: if the document fulfils the expected specifications it automatically continues running through the typography process and the editorial system. If not, the document is stored temporarily in a “to be controlled” folder and a log is generated; it shows which of the elements does not meet the specifications. In this case you need professional help. They can decide if the document is in any way printable without problems or if a document revision is required by the person who prepared it.

The great advantage of this kind of workflow is that the document is checked when it is received i.e. when the person who has made it can be found and there is still time still to correct it.

If you check the document the way we suggest, we have almost a 100% probability of it being error free when sent to the RIP at the most critical final step of the production cycle.

In Appendix A you can see some PitStop Server configuration screenshots. The configuration set up is based upon all the previously described remarks.

If you wish to validate files in-house with PitStop Professional or Server Version we can provide you with the configuration set up.

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# **Appendix A**

**Specifications and examples  
to make a proper PDF document  
and make the necessary validation**

**Version 1.2**

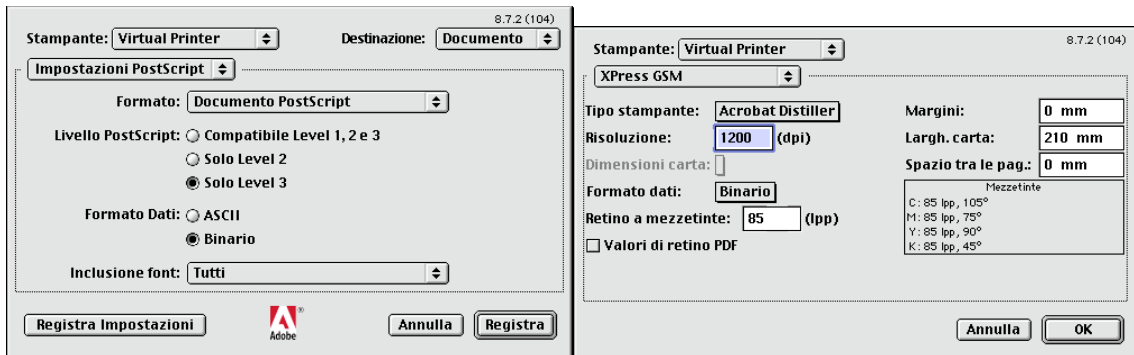
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**Roma, 10.5.02**

## Xpress 3.32

We will show you a configuration example of a page and print setup for a PostScript document to be converted into a PDF document.

A virtual printer has been used with an Adobe printing driver:



## Xpress 4.1

As for the version 3.32, here is an Xpress version 4.1 example.

**Stampa**

Stile stampa: Documento

Copie: 1    Pagine: Tutte    Separatori pagine...

Documento    Impostazione    Output    Opzioni    Anteprima

Separazioni     Docum. distesi     Fascicolo

Includi pagine vuote     Miniatura     Inverti ordine stampa

Sequenza pagine: Tutte    Al vivo: 3 mm

Registrazione: Off    Spostamento:

Stampa in sezioni: Off    Sovrapposizione:

Sovrapposizione assoluta

Formato di stampa...    Stampante...    Conserva le impostazioni    Annulla    Stampa

**Stampa**

Stile stampa: Documento

Copie: 1    Pagine: Tutte    Separatori pagine...

Documento    Impostazione    Output    Opzioni    Anteprima

Descriz. stampante: Acrobat Distiller

Dimensioni foglio: Personalizzato

Larghezza foglio: 230 mm    Spostamento foglio: 0 mm

Altezza foglio: Automatico    Spazio tra le pagine: 0 mm

Riduci o ingrandisci: 100%     Area stampa intera

Posizione pagina: Al lato sinistro    Orientazione:

Formato di stampa...    Stampante...    Conserva le impostazioni    Annulla    Stampa

**Stampa**

Stile stampa: Documento

Copie: 1    Pagine: Tutte    Separatori pagine...

Documento    Impostazione    Output    Opzioni    Anteprima

Stampa i colori: Colori CMYK compo...    Risoluzione: 1200 (dpi)

Mezzetinte: Convenzionale    Densità: 85 (lpi)

Stampa	Pellicola	Mezzetinte	Densità	Angolazione	Funzione
<input checked="" type="checkbox"/>	Cyan	quadriloromia	85	105°	Default
<input checked="" type="checkbox"/>	Magenta	quadriloromia	85	75°	Default
<input checked="" type="checkbox"/>	Giallo	quadriloromia	85	90°	Default
<input checked="" type="checkbox"/>	Nero	quadriloromia	85	45°	Default

Formato di stampa...    Stampante...    Conserva le impostazioni    Annulla    Stampa

**Stampa**

Stile stampa: Documento

Copie: 1    Pagine: Tutte    Separatori pagine...

Documento    Impostazione    Output    Opzioni    Anteprima

Quark PostScript Error Handler

Capovolgim. pagina: Nessuno(a)     Stampa in negativo

Immagini

Output: Normale

Dati: Binario     Sovrastampa il nero EPS

OPI: Includi immagini     Output TIFF a piena risoluzione

Formato di stampa...    Stampante...    Conserva le impostazioni    Annulla    Stampa

**Stampa**

Stile stampa: Documento

Copie: 1    Pagine: Tutte    Separatori pagine...

Documento    Impostazione    Output    Opzioni    Anteprima

**Dimensioni foglio**

L: 229,66 mm    Sin: 0 mm    Des: 0 mm

A: 302,33 mm    Sup: 0 mm    Inf: 0 mm

**Dimensioni docum.**

L: 210 mm    Spostamento foglio: 0 mm

A: 297 mm    Spazio tra le pag.: 0 mm

**Al vivo:** 2,82 mm

**Sezioni:** 1

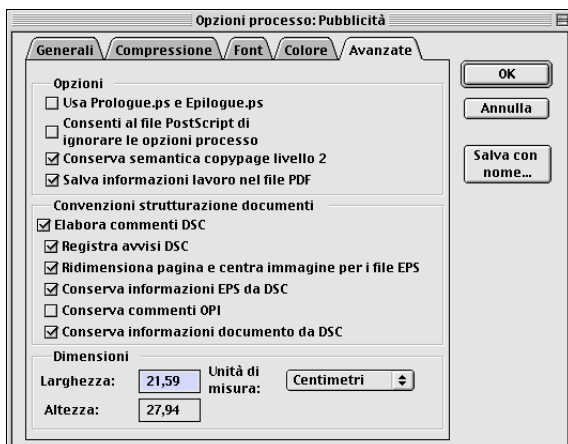
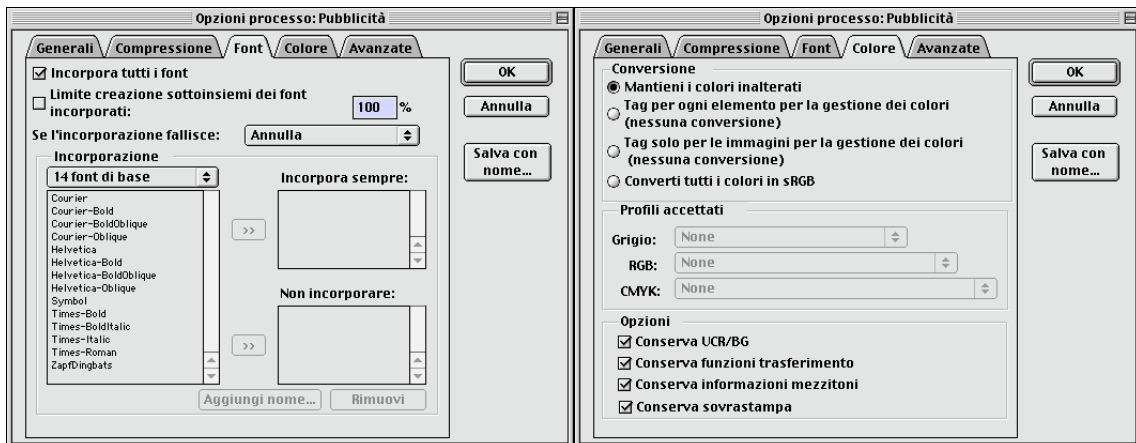
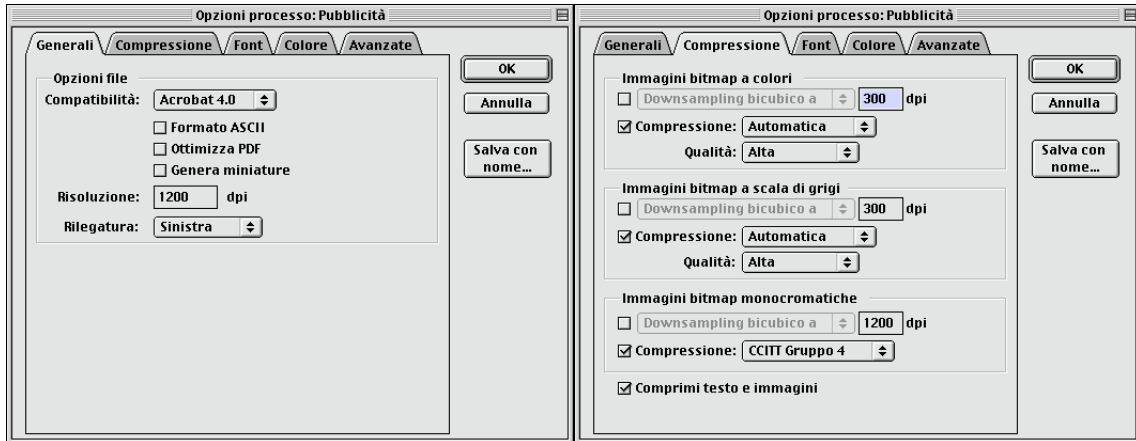
**Scala:** 100%

Formato di stampa...    Stampante...    Conserva le impostazioni    Annulla    Stampa

## Acrobat Distiller 4

Here is the Acrobat Distiller Version 4.05 configuration necessary to make PDF documents with the required settings.

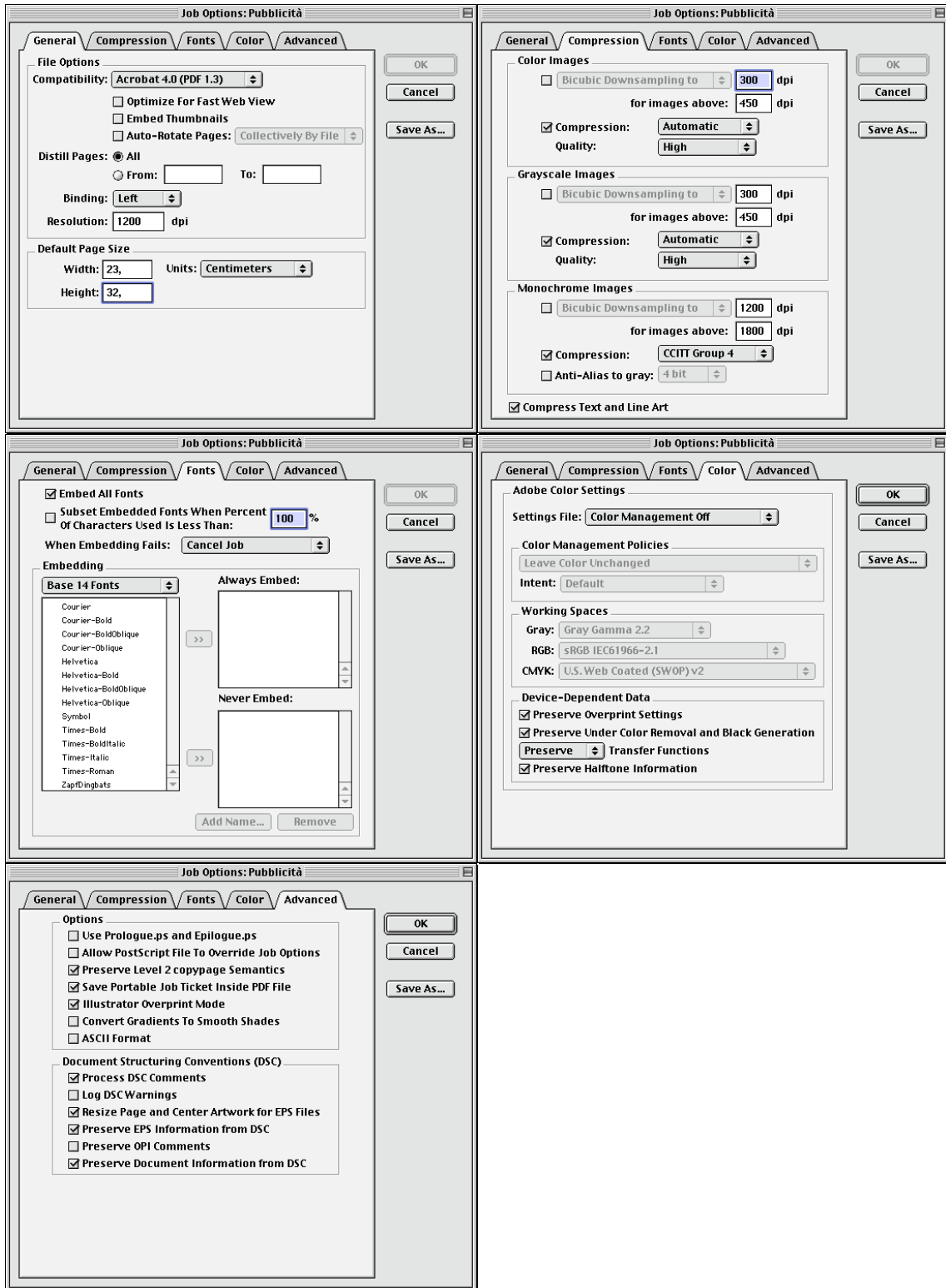
On demand we can provide you with a related layout file (Job Options).



## Acrobat Distiller 5

As above, here is a Version 5 example.

Here too, available on demand, is a related layout file (Job Options).



## PitStop

Here below is the configuration of “pre-flight” program from Enfocus Software “PitStop Server Version” ([www.enfocus.com](http://www.enfocus.com)), used to validate all received PDF files.

From this configuration windows you can easily set the settings necessary to the files to go through the automatic work flow.

If you would like to validate files in-house with PitStop Professional or Server Version, the configuration file, corresponding to the setting above-mentioned is available.

