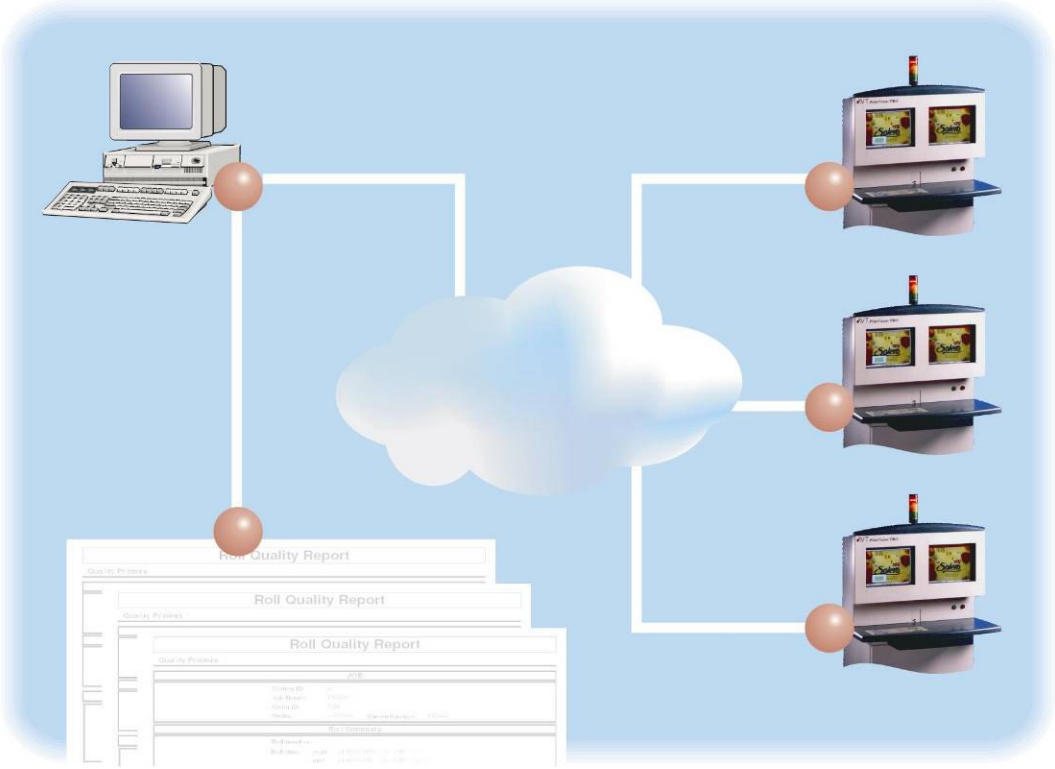
PrintFlow User Guide



For use with:

- ►PrintFlow Manager
- ►PrintFlow module of all AVT PrintVision systems

Product Version 1.4
Document Revision 3
AVT P/N: 17200183 Rev. A

AVT (Advanced Vision Technology) Ltd.
5 Hanagar Street
P.O.B. 7295
Neve Ne'eman Industrial Zone
Hod Hasharon 45 241
Israel

Tel: +972-9-761-4444

Fax: +972-9-761-4555

www.avt-inc.com

International Customer Support:

Tel: +972-9-761-4444

Fax: +972-9-761-4499

US Customer Support:

Tel: 770-541-9780

Fax: 770-541-9342

Contents

1 Overview

In the sophisticated modern printing industry it is no longer sufficient to monitor the quality of the "Physical Layer" (that is, the actual web material) and move on. It is essential to be able to collect and manage all production information— the "Information Layer"— and supply this information to analysis and decision-making levels in the company.

AVT's PrintFlow and PrintFlow manager modules are designed for this purpose. They are optional add-ons to the PrintVision family of solutions, which supply printers & production managers with a "Quality Information Layer" to help manage and improve their production processes.

This document is designed for use with both PrintFlow and PrintFlow Manager. Sections of this manual that apply only to PrintFlow Manager are indicated by a **note** and are also covered in chapter 5.

This chapter explains basic PrintFlow concepts and the general screen layout.

1.1 PrintFlow vs. PrintFlow Manager

PrintFlow

PrintFlow (PF) is an optional reporting module available as an add-on to all AVT PrintVision automatic inspection systems. Based on a standard SQL database platform, it provides comprehensive job and roll quality information, including: defect statistics, defect classification, and images detected defects, along with the corresponding "Master" (non-defective) images.

Inspection data is stored in the system's database, and roll reports can be printed during the run. You can access these roll reports during the run or later. You can edit roll reports as necessary and export them in printed or digital format.

PrintFlow Manager

PrintFlow Manager (PFM) delivers production floor print quality information to managers, quality assurance managers and production engineers, enabling them to monitor, analyze and control the quality of the complete production process from their desktops. PrintFlow Manager provides access to the inspection data of all the PrintVision systems on your site.

The PrintFlow and PrintFlow Manager schematic block diagram is shown in Figure 1. From the diagram it can be seen that each PrintFlow system installed in each of the stations provides data related to the quality of the rolls through images. The information from each PF station in a typical printing company is transmitted, analyzed and edited in the PrintFlow Manager station. The data from all the PF stations can if desired by the customer needs, be connected to several PFM stations.

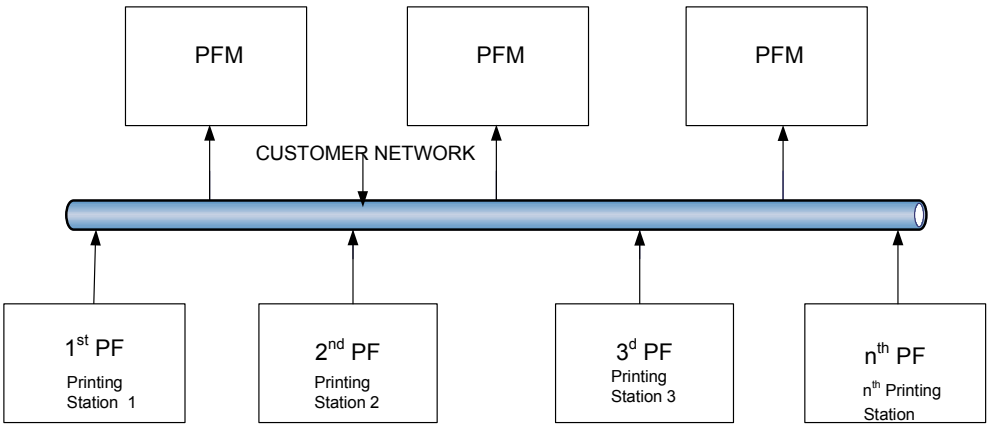


Figure 1: Typical PrintFlow and PrintFlow Manager Schematic Block Diagram

What's new in PrintFlow Manager Ver. 1.4

The following is a summary of the new features of PrintFlow version 1.4

Item	Feature	Capabilities
1	Defect Map and Graphic display	PrintFlow Manager provides Graphical Display and Editing Defects capabilities. Defect Map is a detailed list of. Defects found during Automatic Inspection See chapter 4.
2	Select default first roll number.	The PrintFlow supports Default first roll number that can be 0 or 1. See chapter 4
	Support Description and Notes	The PrintFlow supports Description and Notes of job that will appear in the roll report.
4	Languages	PrintFlow supports Chinese and Japanese.
5	Barcode Reports (optional)	Barcode Reports are integrated into the PrintFlow data base and Roll Reports. See chapter 3.
6	Ideal Reports (optional)	Ideal Reports are integrated into the PrintFlow data base. Ideal helps maintain consistent color in print run and provides accurate on-line color measurement. See chapter 4,
7	Combined display (for Argus only)	PrintFlow supports PV and LCCD combined display of roll reports from both Process and Quality cameras. This improvement is relevant only to Argus systems. See chapter 4
8	On-line defects editing (optional)	PrintFlow provides defects Viewing and editing capabilities online. See chapter 4.

1.2 Basic Concepts

Automatic Inspection

PrintVision Automatic Inspection systems detect and record defects in the web. The exact nature of Automatic Inspection depends on the type of system (Helios, Jupiter, Argus etc.). The efficiency of Automatic Inspection depends on the sensitivity settings being appropriate for the Job.

Sensitivity Settings

When a PrintVision system is installed, default sensitivity settings are configured for the particular converting process. These settings define the thresholds for detecting defects. If the settings are too high, insignificant defects will be detected; if they are too low, important defects will be ignored. The operator must therefore adjust the settings to suit each particular Job.

PrintFlow reports indicate the sensitivity settings that were active for each section of the roll.

Viewing Mode

When Automatic Inspection is *not* activated, the system is in "Viewing" mode. The operator can see the web on the screen (and move the camera to view different parts of the web), but the system does not detect defects. PrintFlow reports indicate sections of the roll for which the system was in "Viewing" mode. (They also indicate the percentage of roll that was "Inspected" and the percentage that was "Viewed"; the sum of these two values is 100 %.)

The system cannot provide information about print quality for sections that are marked "Viewing".

Units of Measurement

PrintFlow displays data in the units it was measured in by the PrintVision system. Therefore Jupiter, Argus and Apollo data relates to length along the roll and lane, while Helios data relates to label number and lane. Length along the roll is measured either in meters or feet, depending on your local conventions.

1.3 Screen description

General

The Print Flow and PrintFlow Manager screens have similar layout and functions.

PrintFlow screen

Print Flow screen Data base explorer and Data area windows (figure 2), relates to a single AVT system.

PrintFlow Manager Screen

The PFM Data base explorer and Data area windows (figure 3), provides access to all AVT systems in site, while PF relates to a single system.

The PrintFlow Manager differs from the PrintFlow in its capability to monitor, analyze and control the quality of the complete production process from a remote location.

It also includes the Statistics function which is unique to the PrintFlow Manager.

Basic screen layout

The PrintFlow screen has three areas:

- The toolbar.
- The database explorer (expands to display Jobs, Orders and Rolls).
- The data area (displays data for the selected item on the database explorer, and is populated differently depending on whether you are in Summary or Map view).

The PrintFlow screen layout is shown in Figure 2 below. Figure 3 illustrates the PrintFlow Manager screen.

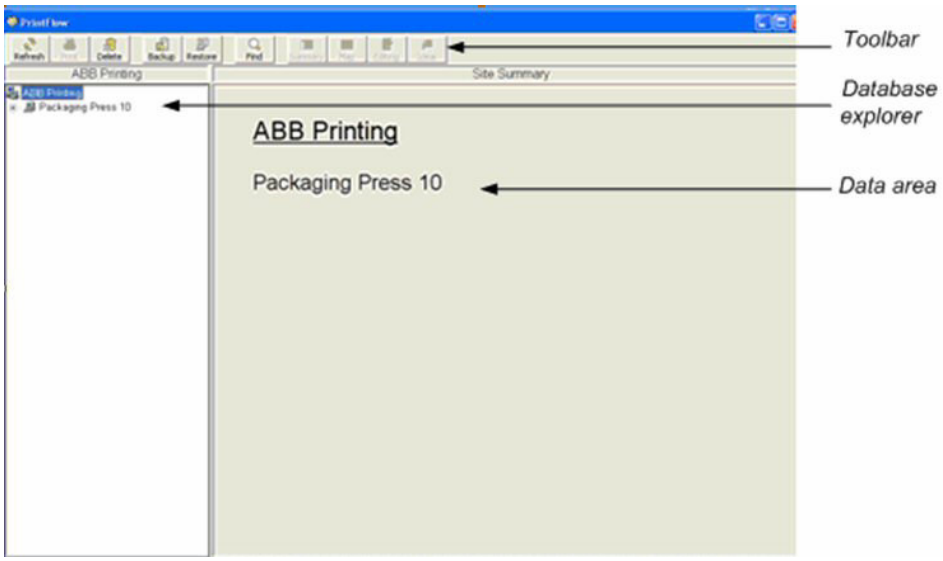


Figure 2: PrintFlow screen layout

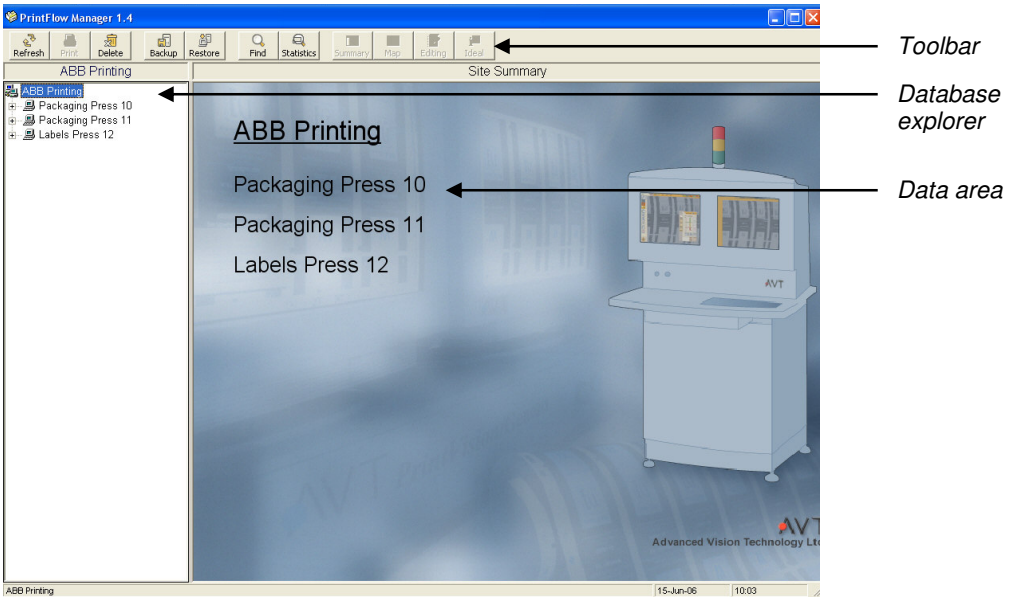
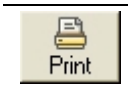
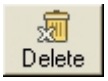
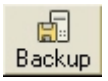
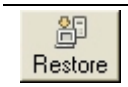
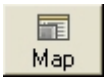


Figure 3: PrintFlow Manager screen layout

Main toolbar

The PrintFlow main Toolbar summary is described in the table below:

Table 1: Toolbar summary

Icon	Function	Description	Reference
	Updates display to include recent changes.	Click **Refresh** to update currently displayed data if the database has changed since you opened the current screen.	See chapter 6, paragraph 6.1.
	Print Report for selected Roll.	Opens a dialog-box that lets you print or save a report.	See chapter 4, paragraph 4.1.
	Delete selected Roll/Order/Job from the database, or delete old data from a PrintVision system.	When deleting old data, you are asked to select a date; only data from before the specified date is deleted.	See chapter 6.
	Create Backup copy of the entire database.	Use this option to save a copy of the database.	See chapter 6, paragraph 6.2.
	Restore an earlier (backed up) version of the database.	Overwrites the current database. Available only if a Backup copy was made.	See chapter 6, paragraph 6.3.
	Search for an Order that contains a certain string (text) anywhere in its name.	Outputs a list of all Orders containing the string (not case sensitive).	See chapter 2, paragraph 2.2.
	Lets you export data of rolls into MS Excel or other programs.	Allow you to select database rolls, from which you can extract specific data for export in .xls or .txt format.	see chapter 5
	Displays the Summary data for the currently selected Job, Order or roll.	This toolbar button is active only when a roll is selected.	see chapter 3
	Displays the Map View for the selected roll.	This Button is active only when a roll is selected. It allows viewing, editing and analyzing roll report defects data.	see chapter 4
	Displays Editing View for the selected roll.	This Button is only active when a roll is selected. It is more convenient than Map View for fast-editing Roll defect Reports.	see chapter 4
	Displays color measurement report	Button is only active when a roll is selected. Ideal helps maintain consistent color within each print run.	see chapter 4

Database explorer window

The data base explorer window is located on the left side of the screen. It shows the printing company name, lists all the inspection station and all jobs for the selected stations. (See chapter 2 for more detailed description).

Data area window

The Data area window displays data according to items selected on the database explorer and the selected toolbar. The various selected Data functions are detailed in the following chapters.

2 Roll reports

This chapter describes the two ways of locating a particular roll to view its summary and detailed report:

- Using the Database Explorer tree
- Using the Search function

2.1 Using the Database Explorer

The data items of the PrintFlow database are accessed using the database explorer pane, on the left side of the screen. The explorer pane shows a representation of the database in the form of a schematic "nested tree".

In the top of the list the printing company name is shown.

Next at the highest level of the database explorer list the inspection stations for which data is included in the database. Usually each inspection station is named after the press or rewinder that it is installed on. Clicking on a station "expands" that part of the tree, displaying all Jobs for the selected station. Similarly, clicking on a Job expands the Job, showing all Orders for the Job; and clicking on the Order displays all Rolls for the Order.

The database explorer window, on the left side of the screen is shown in the Figure 4.

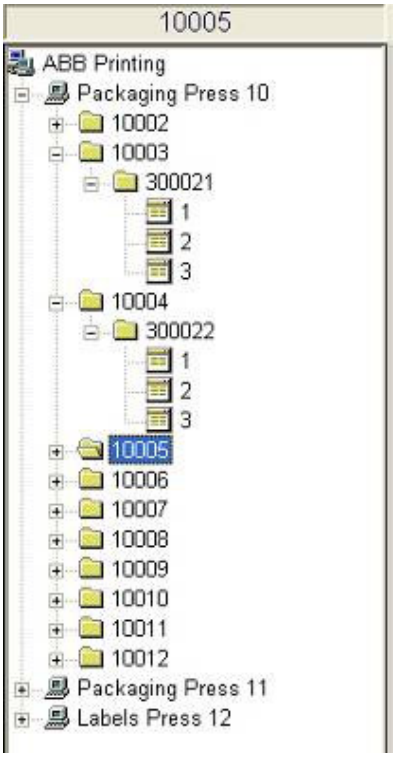


Figure 4: Database explorer window

This structure is illustrated in the figures below.

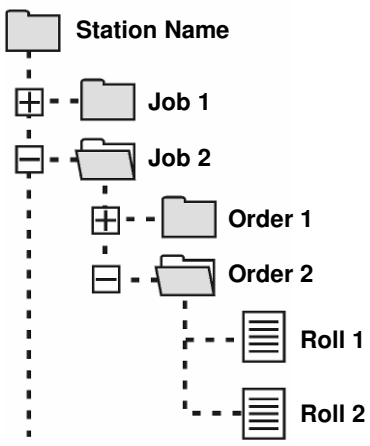


Figure 5: The database explorer tree

Expanding and contracting items in the tree

- To expand a database explorer item, click on the + (plus) sign to its left.
- To contract a database explorer item, click on the – (minus) sign to its left

Note: Items that do not have a + sign next to them contain no sub-items to be expanded.

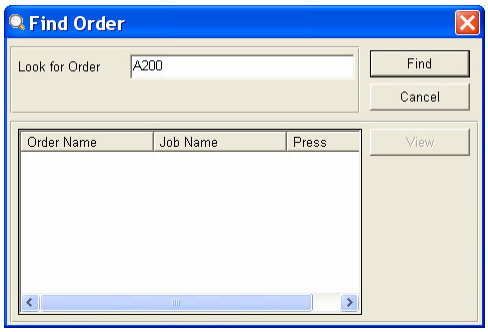
2.2 Using the Search Function

The PrintFlow Search function lets you search Order Name.

To search for an Order:

1. On the main toolbar, click **Find**.

   The Find dialog-box opens.



2. Type in the order dialog box.

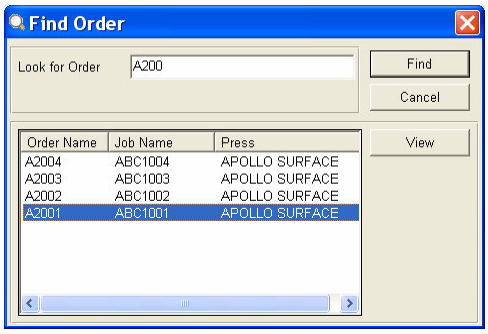
Note: You can type in *part* of a name, and the PF will locate all orders that contain the string. For example, if you type in "A200" the PF will locate any order where "A200" appear, such as "A2003", "BA200", or "BA2003".

3. Click **Find**.

The search results appear in the dialog-box.

4. Select the Order you want, by clicking on it.

   The selected Order is highlighted.



5. Click **View**.

   The selected Order appears in the Database tree, and the Order Summary appears in the data pane. (You can select any roll, and view its Summary or Map.)

3 Summaries

This chapter describes the PF summary function.

the user can view all the information of a selected Press which includes a table that lists: Job Name and total number of jobs, all the press Order names, the number and length of printed rolls, with their start/end times, the inspected and viewing rolls lengths, good and defective material.

The PrintFlow can be used to view different summaries in the data window. The summaries are given in the table below.

Table 2 : Summary Function

Item	Name	Function	Reference
1	Press Summary	Press summary function enables the user to view all the information of a selected Press.	See chapter 3, paragraph 3.1.
2	Job Summary	Job Summary Press summary function enables the user to view all the information of a selected Order.	See chapter 3, paragraph 3.2.
3	Order Summary	Order summary function enable the user to view Order information which includes: total number and length of printed rolls in a selected order	See chapter 3, paragraph 3.3.
4	Roll Summary	Roll summary function enable the user to view Roll information.	See chapter 3, paragraph 3.4.
5	Barcode Summary (optional)	Barcode Summary Reports are integrated into the PrintFlow Data Base and Roll Reports.	See chapter 3, paragraph 3.5.

The general Summary View layout is illustrated using the Job summary screen below.

Summary View

In Summary View, a summary of data for the item selected in the database explorer tree (on the left) is displayed in the data area. The type of data displayed depends on whether the item selected is a press, job, order or roll (the figure below shows a Job summary).

Summary view includes:

- The Press/Job/Order/Roll Summary (upper part of the data area).
- A list of recently printed rolls (from the current Press, Job, or Order starting with the most recent). See Figure 6

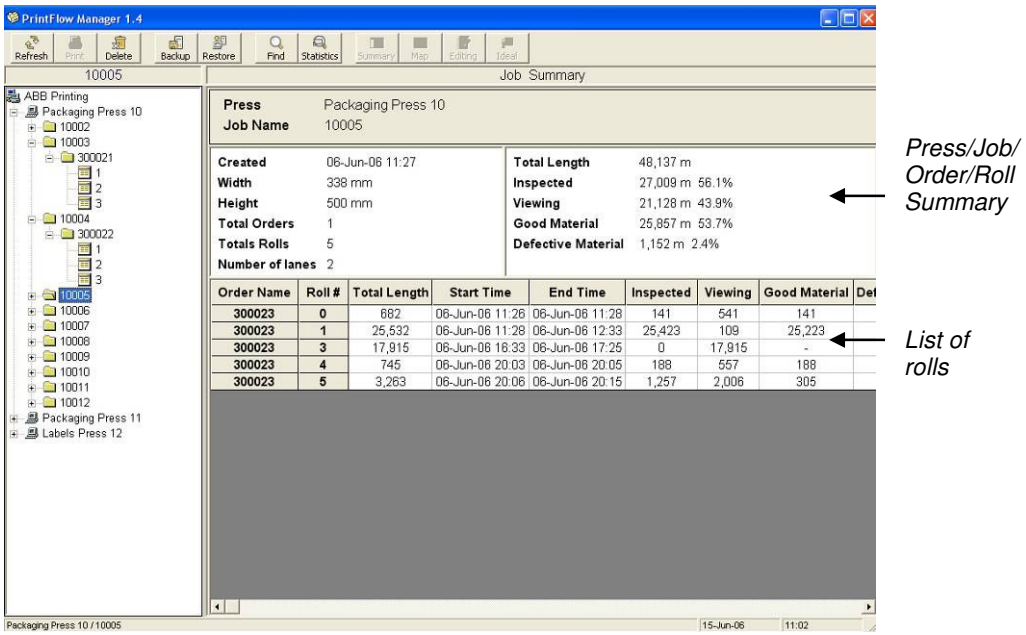


Figure 6: Report Summary layout

3.1 Press Summary

The Press summary function enable the user to view all the information of a selected Press which includes a table that lists: Job Name and total number of jobs, all the press Order names, the number and length of printed rolls, with their start/end times, the inspected and viewing rolls lengths, good and defective material.

When PrintFlow opens the display it is at System Level. The database explorer shows all systems connected to the PrintFlow. The data area is empty of data.

To view a Press Summary:

- On the database explorer, click on the name of one of the (Press name) systems.

  The selected system is highlighted, and the Press Summary appears in the data window. The Press Summary includes a list of Rolls recently printed, starting with the most recent (see figure below).

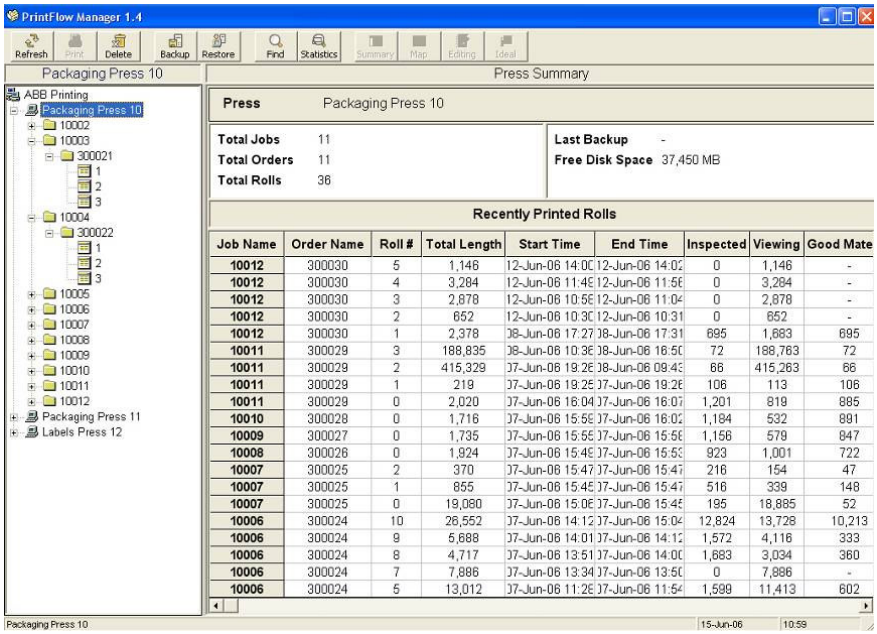


Figure 7: Press Summary

The main Press Summary Field shown in the figure above is summarized in the table below.

Table 3: Press Summary Fields

Field	Comments
Press	Press name
Total Jobs	Total number of Jobs for this press
Total Orders	Total number of Orders for this press
Total Rolls	Total number of Rolls for this press
Last Backup	Date of last database backup
Free Disk Space	Amount of free local disk space.
Recently Printed Rolls	A table listing the last 20 (or 50, depending on system) rolls for this Job, starting with the most recent (see next section).

Recently Printed Rolls

The Recently Printed Rolls list shown in the figure above is summarized in the table below.

Note: Some columns may extend beyond the right edge of the data area. To view these columns, simply make the existing columns narrower, by clicking-and-dragging the visible column headings to the left.

Table 4: Recently Printed Rolls table headings

Column	Comments
Job Name	Lists the job names
Order Name	Order ID
Roll #	Roll number
Total Length	Length of roll. (All length units are meters or feet depending on configuration.)
Start/End Times	Date and time that roll began and finished printing/rewinding
Inspected	Length of web in roll that was inspected with Automatic Inspection.
Viewing Mode	Length (usually in meters) of web in roll that was *not* inspected with Automatic Inspection (i.e. system was in Viewing Mode)
Good Material	Length of web in roll that was inspected and not found defective.
Defective	Length of web in roll that was inspected and found defective

3.2 Job Summary

The Job summary function enable the user to view Job information which includes a list of: total number of Order name, Roll number, total length of printed rolls, with their start/end times, length and percentage of inspected and viewing material, length and percentage of good and defective material.

To view a Job Summary:

1. On the database explorer, click on the required press.
2. Select the required Job.

The Job Summary appears (see figure below).

The Job Summary includes a list of Order names, number of printed Rolls, with their start/end times and length inspected.

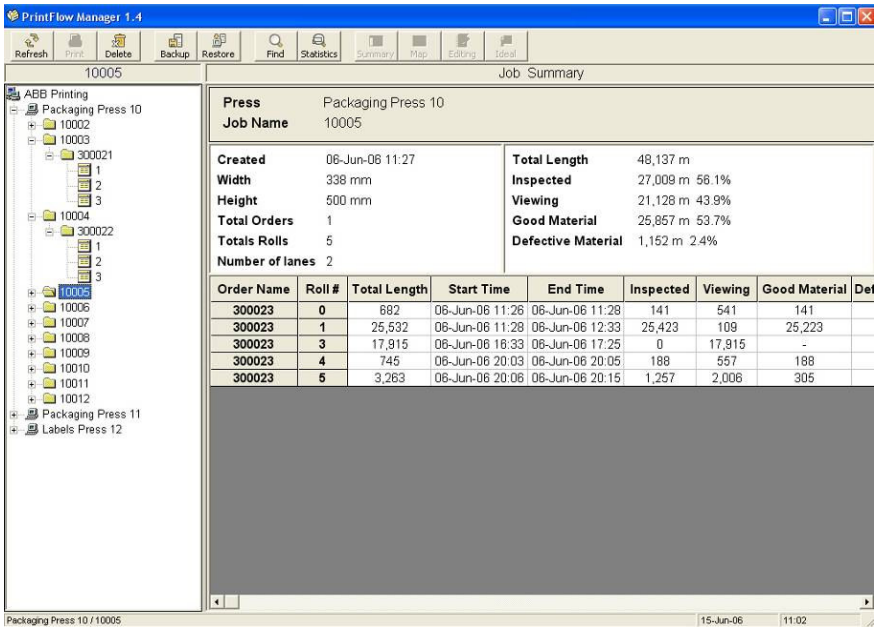


Figure 8: Job Summary

The Job Summary Field shown in the figure above is summarized in the table below.

Table 5: Job Summary Fields

Field	Comments
Press	Press name
Job Name	Job name
Created	Creation date and time
Width	Width of repeat
Height	Repeat length (Circumference)
Total Orders	Total orders for this Job
Total Rolls	Total rolls printed for this Job

Field	Comments
Number of Lanes	Number of lanes in Job
Total Length	Total length printed in all orders for this Job. (All length units are feet or meters depending on configuration.)
Inspected	Length—and percentage of total length—of material that was inspected with Automatic Inspection.
Viewing	Length of roll—and percentage of total length—that system was in Viewing Mode (and therefore there was no Automatic Inspection).
Good Material	Length—and percentage of total length—that was inspected and found to be without defects
Defective Material	Length—and percentage of total length—that was inspected and found to include defects
Recently Printed Rolls	A table listing the last rolls for this Job, starting with the most recent. (See Table 4: Recently Printed Rolls table headings)

3.3 Order Summary

The Order summary function enable the user to view Order information which includes: total number and length of printed rolls in a selected order, with their start/end times, length and percentage of inspected and viewing material, length and percentage of good and defective material.

To view an Order Summary:

1. On the database explorer, click on the required press.
2. Select the required Job.
3. Select the required Order.

The Order Summary appears (see figure below).

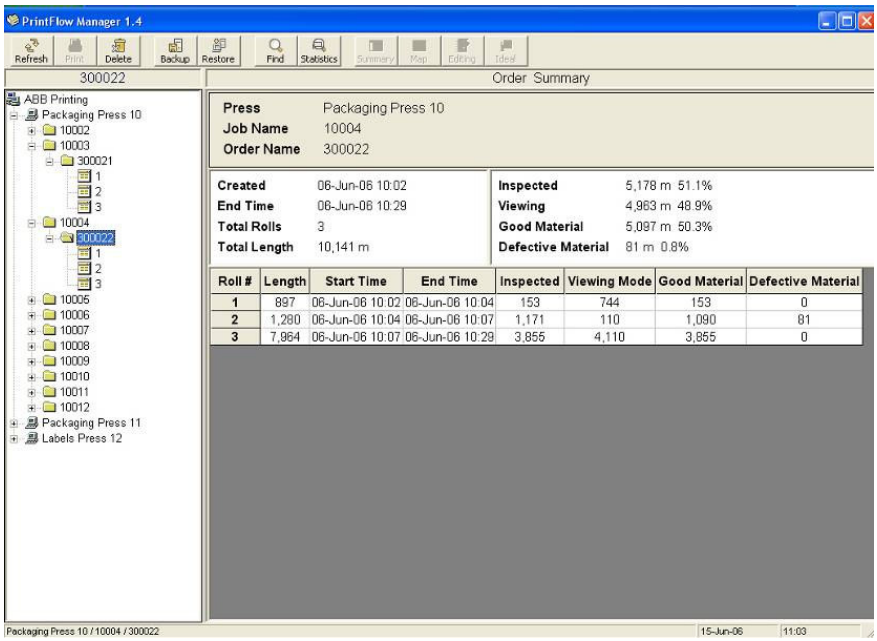


Figure 9: Order Summary

3.4 Roll Summary

The Roll summary function enable the user to view Roll information which includes: total length, length and percentage of inspected and viewing material, length and percentage of good and defective material, including sensitivities table.

The PF can be used to view the following Summaries in the data window:

At "Roll" level (in the database "tree") there are two possible displays in the Data pane:

- **Roll Summary** is a general summary and Automatic Inspection data for the selected roll.
- **Defect Map** is a detailed list of. Defects found during Automatic Inspection, with images. (Defect Map is described in the next chapter.)

In order to view the Roll Summary you must have the “Summary” icon on the toolbar selected.

To display the Roll Summary:

Verify that the “Summary” icon on the toolbar is selected.

1. On the database explorer, click on the required press.
2. Select a Job.
3. Select the required Order and click on it.
4. Select a Roll, and click on it.

The Map, Editing, and Ideal icons are now enabled.

5. Press on “Summary”, the Roll Summary appears. (See figure below).

Note: If the “Map” or “Editing” icon is selected instead of the “Summary” icon (on the toolbar), then the Defect Map appears instead of the Roll Summary.

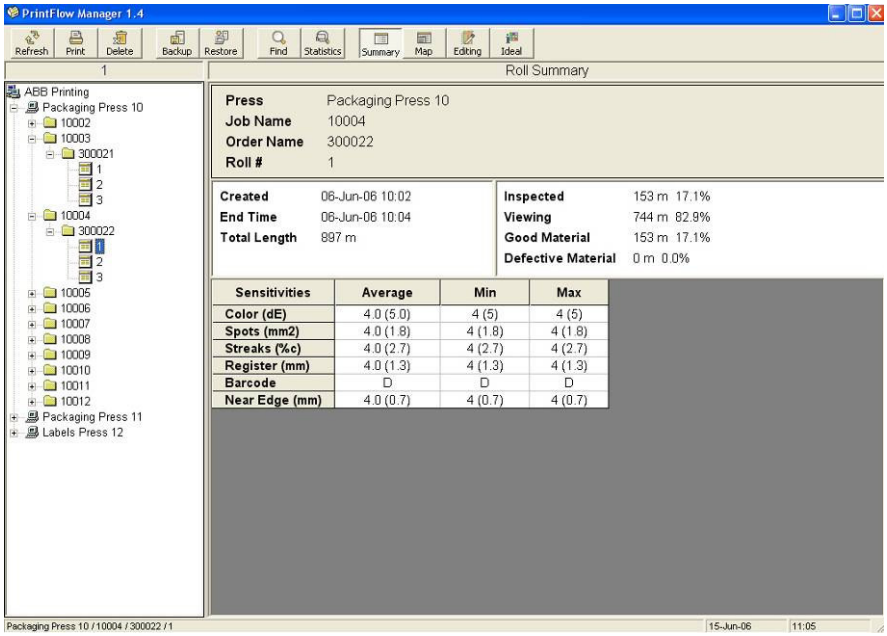


Figure 10: Roll Summary

3.5 Barcode Summary (optional)

The PrintFlow Manager can generate Barcode Summary Reports that are integrated into the PrintFlow Data Base and Roll Reports. The Barcode Summary optional is part of the Roll summary (see paragraph 3.4).

The PFM prints roll Barcode provides statistics information of the roll.

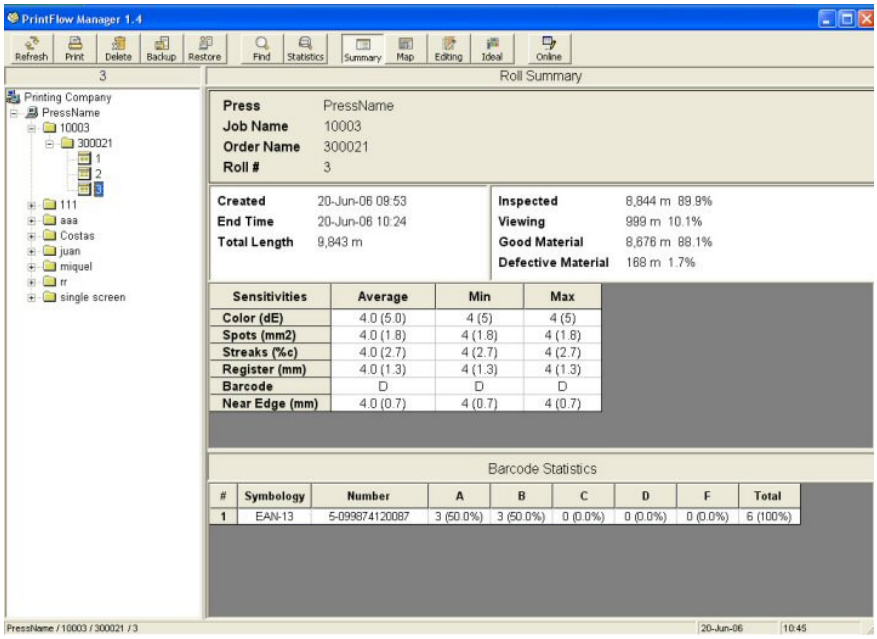


Figure 11: Barcode Summary (optional)

4 Defect Map

This chapter describes Defect Map, Defect editing, Printing and Structure reports, and Ideal option.

Reports are generated *per roll*. The detailed information that will be included in printed reports is initially displayed in the Roll Summary, Map View, Editing View and Ideal view screens. Roll Summary was explained in chapter 3; this chapter deals with the Map, Editing and Ideal Views.

You can view the defects that were found and decide which defects to exclude from the printed report (the two methods of doing it are explained in the next section). You can print roll reports directly to a printer, or to a file.

The following paragraph describes:

- **Map View vs. Editing View** (the two methods of viewing and editing inspection results)
- **Working with Map View** (Using the Defect Map, Viewing Defect and Master images, Accepting/Rejecting defects)
- **Working with Editing View** (Viewing Defect and Master images, Accepting/Rejecting defects)
- **Printing Reports**
- **Report Structure**
- **Ideal View (optional)**

4.1 Map View vs. Editing View

Roll report information includes data and images of the detected defects. It may include small defects that are of no significance, that were recorded simply because the Sensitivity thresholds were too high during the inspection. In such cases you want to remove the irrelevant defects, and produce a roll report that will enable you to mark or discard *real waste only*.

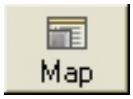
PrintFlow Manager offers two interfaces to accomplish this: Map View and Edit View. Each View allows you to view and edit roll report data in a different way. You will discover for yourself which view you prefer to use for which type of work. However, in general:

- **Map View** includes sensitivity settings, and shows the Defect Type for *each* defect, it is therefore particularly useful for analyzing print quality.
- **Editing View** shows defect details (including type, but not sensitivity setting) for the selected defect, and is particularly useful for fast editing of a report (for example to use in conjunction with WorkFlowLink).

Important: Editing, whether in Map or Editing View, must only be performed by skilled personnel with knowledge of the specific customer's quality requirements.

4.2 Working with Map View

The main component of Map View is the Defect Map: a detailed report for the roll. It lists all defects by position along the roll. You can compare defect images with the Master image, to better understand the problem. Where necessary you can exclude defects that are of no interest, from the printed report.



At "Roll" level there are three possible displays in the Data pane: Roll Summary, Defect Map and Editing View. In order to view the Defect Map you must have the **Map** icon on the toolbar selected.

To display Map View for a roll:

1. In the database explorer, select the required roll (Select **Job ► Order ► Roll**).
2. Click the **Map** icon on the toolbar.

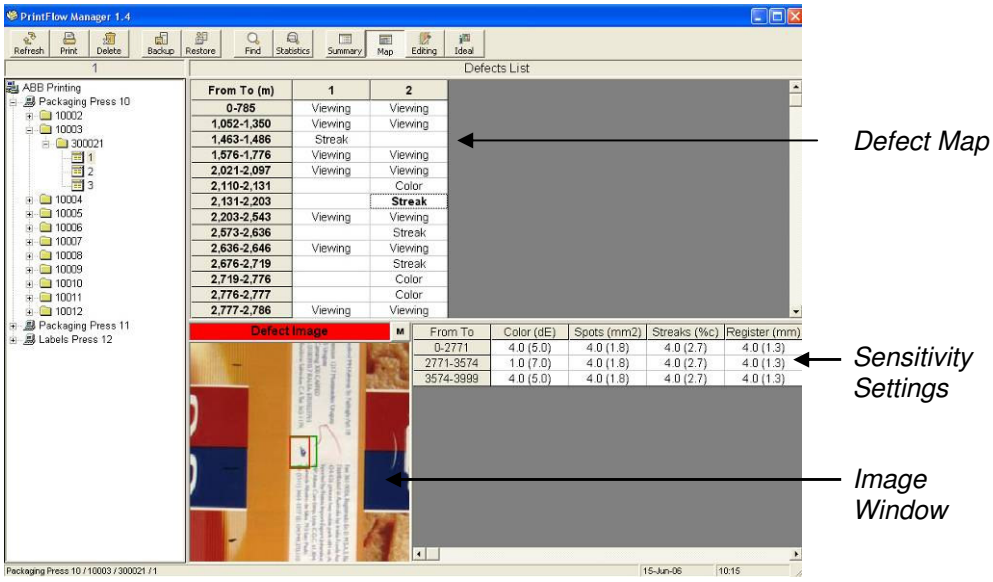


Figure 12: Defect Map (Map View)

Table 6: Defect Map summary

Pane	Comments
Defect Map	Lists all defects found by the system, by length and lane. For each defect the map indicates the defect type. (If Automatic Inspection was not active the map indicates "Viewing".)
Sensitivity Settings	Shows the sensitivity settings that applied during Automatic Inspection.
Image Window	Displays the Defect or master image for the currently selected defect. (This pane is initially blank, until you select a defect.) Toggle between Defect and Master images using the toggle button at the top right of the Image Window.

The Defect Map

The Defect Map (see figure below) lists all defects found during Automatic Inspection.

- The left-hand column shows the position along the roll where the defect occurred
- The lanes in the repeat appear as columns, and the defect type appears in the appropriate lane.
- Where there is more than one defect for a particular section of the web, the name of the most severe defect is listed.
- Sections of the web for which Automatic Inspection was not active are marked "Viewing".

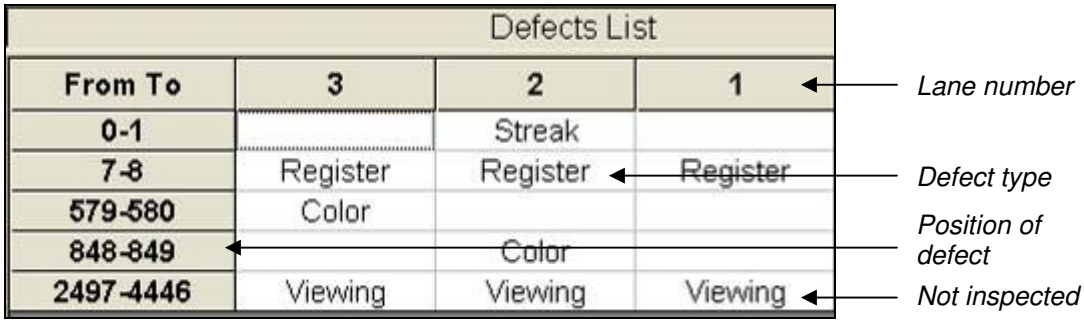


Figure 13: The Defect Map

Sensitivity Settings

The Sensitivity Settings table shows the sensitivity settings that applied during Automatic Inspection.

The left column lists start/end distance that the settings applied. Each time you modify settings, a new roll appears. (In the figure below, the settings were changed at 835 and 838 meters.)

From To	Color (%c)	Spots (mm2)	Streaks (%c)	R
0-835	8.0 (2.7)	7.0 (0.6)	3.0 (8.8)	
835-838	7.0 (3.8)	7.0 (0.6)	3.0 (8.8)	
838-1021	6.0 (4.9)	7.0 (0.6)	3.0 (8.8)	

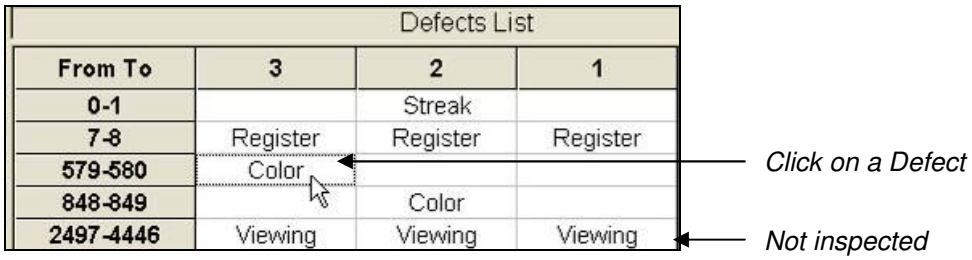
Figure 14: Sensitivity Settings

Viewing Defect and Master Images

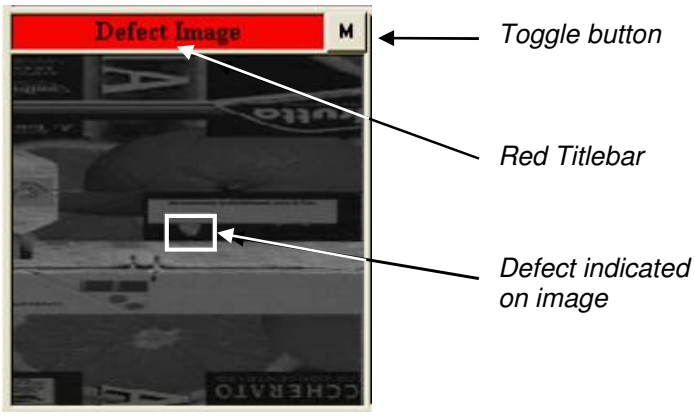
From the Defect Map you can view Defect and Master Images for any listed defect.

To view images for a defect:

1. On the Defects List, click on the required defect.

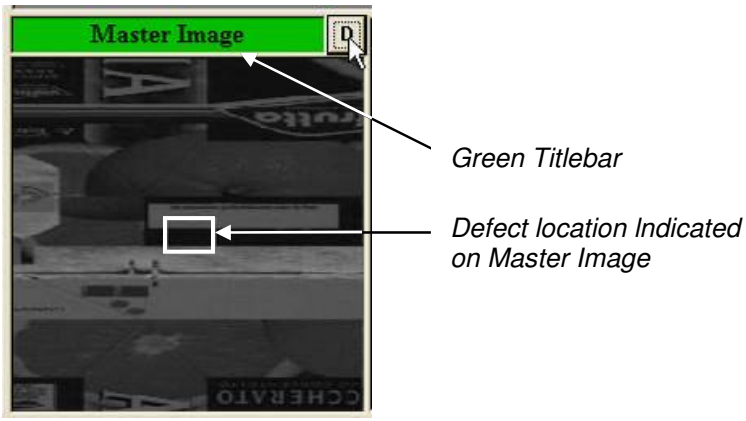


The Defect Image appears in the Image window. The red title bar indicates that the image is a Defect.



2. To toggle to the Master Image for the defect, click the toggle button on the Image window.

   The Master Image appears. The Green title bar indicates that it is a Master Image. (Clicking the Toggle button again will display the Defect Image again.)



Rejecting Defects

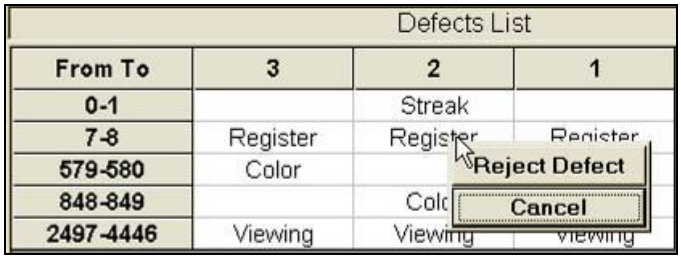
If sensitivity settings were too high during Automatic Inspection, the Defect map may include very small defects that you do not need to include in your printed report. You can "reject" these defects.

Important: Rejecting Defects should only be done by skilled personnel with knowledge of the customer's quality requirements.

To reject a Defect:

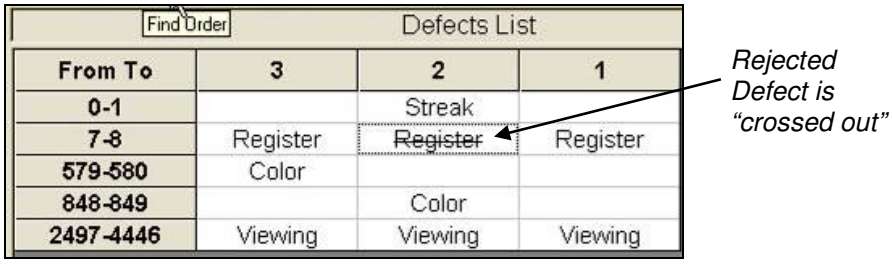
1. On the Defects List, **right-click** on the required defect.

   A pop-up menu appears.



2. Click **Reject Defect**.

   The defect is "crossed out" on the Defects List, and will not be included in printed reports.



Accepting Defects

You can accept a defect that you have previously rejected, so that from now on it will be included in printed reports.

To accept a Defect:

1. On the Defects List, **right-click** on the required defect.
2. Click **Accept Defect**.

   The strike-through is removed, and the Defect accepted.

4.3 Working with Editing View

Editing View is an interactive Roll Display with colored areas indicating the inspection results. You can instantly see the quality of any part of the roll, control the scale of the display, view Defect and Master images for any location, and remove insignificant defects from the Roll Report with a single click.

Editing View may be more convenient than Map View for fast-editing Roll Reports.

To display Editing View for a Roll:

1. In the database tree, select the required roll (**Job ► Order ► Roll**).
2. Click the **Editing** icon on the toolbar.

   Editing View for the selected roll appears.

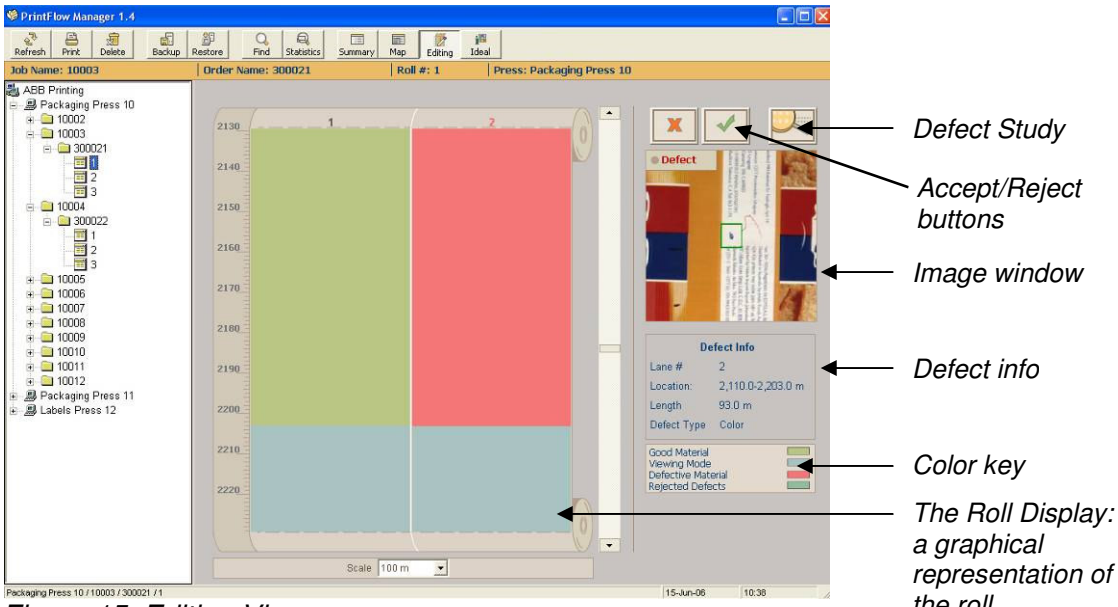


Figure 15: Editing View

Using the Roll Display

The roll display is a color coded display of the defects map. The graphical display is shown in four colors. When an area of the display is selected it is colored white.

In the Roll Display area you can:

- Adjust the scale of the Roll display to:
  - View a longer length of web, or
  - View a shorter length of web in greater detail
- Use the scroll bar to view any part of the web
- Instantly see the status of any part of the web by the color showing on the Roll Display
- See the portion of defects coding and across the web.
- Click on any defect in the Roll Display to:
  - View the image and info for the selected Defect
  - Compare the Defect image with the Master image
  - Exclude the Defect from the Roll Report (by marking it as good material)
  - Restore a Defect that was previously excluded from the Roll Report

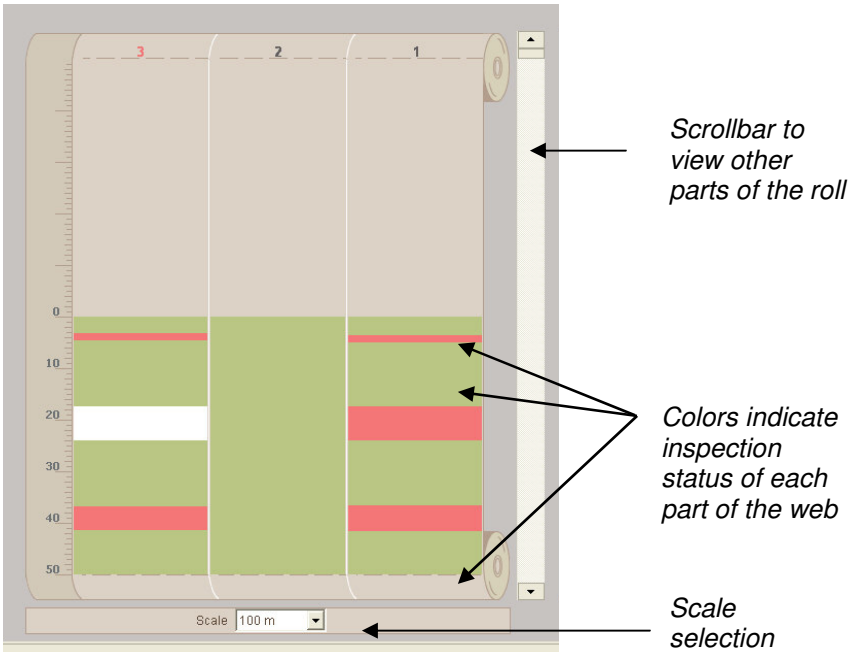


Figure 16: Roll Display

Color Key

The color of any particular area of the roll display indicates its status, as summarized in the table below.

Table 7: Roll Display Color Key

Color	Name	Description
Light Green	Good Material	No defects were detected in this part of the web.
Light Blue	Viewing Mode	System was in Viewing Mode. This part of the web was not inspected.
Red	Defective Material	Defect was found in this part of the web.
Dark Green	Rejected Defects	Defect was found in this part of the web, but has been rejected. Material is marked as good.
White	Selected	The area is currently selected and its Defect Image and Info appear on the right side of the screen.

Defect window

The Defect window shows the image of the defect that is currently selected in the Roll Display. The area of the defect is marked with a rectangle.

Figure 17: Defect window

Defect Info

The Defect Info window shows the Lane, Location, Length and Type, of the currently selected defect.

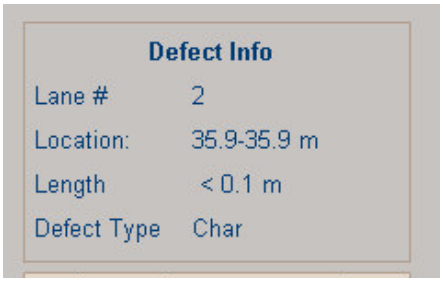


Figure 18: Defect Info

Defect Study

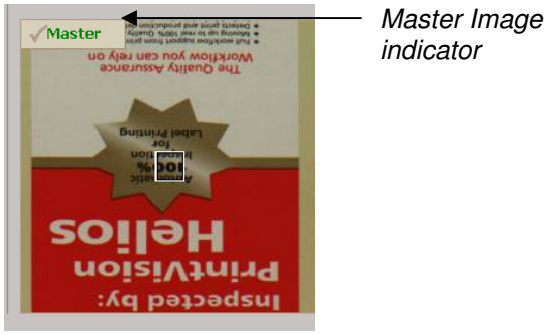
The Defect Study icon is used to compare the image of the currently selected defect with the Master image, by toggling between them in the Image window.

To perform a Defect Study:

1. Scroll to the desired section of the Roll Display. (If necessary select a different scale.).
2. Select a defect by clicking on it in the Roll Display.

   The Defect image appears in the Image window.

3. Click the Defect Study icon again to toggle between Defect and Master Images in the Image window.



Rejecting Defects

When the system has detected a defect that is insignificant for your customer, you can *exclude* it from the Roll Report by "accepting" the material as *good*.

Important: Rejecting Defects should only be done by skilled personnel with knowledge of the customer's quality requirements.

To mark material as Good:

1. In the Roll Display, select a red Defect area by clicking on it.

   The selected area is colored white, and the Defect Image and Info appear on the right of the screen.

2. Use the Defect Study button  to compare Defect and Master images.

3. If you are sure that the defect is not significant for the customer, click the green **Accept Material** button 

   The color of the defective area on the Roll Display changes to dark green, indicating that the area is now marked as good material, and will not appear in the Roll Report.

Accepting Defects

If a defective area was marked as Good, and you now realize that it is defective after all, you can *set* it again as a defect.

To mark material as No Good:

1. In the Roll Display, select a dark green "Rejected Defect" area by clicking on it.

The selected area is colored white, and the Defect Image and Info appear on the right of the screen.

2. Click the red **Reject Material** button 

   The color of the defective area on the Roll Display changes to red, indicating that the area is now marked as defective, and will be included in the Roll Report.

4.4 Ideal View (optional)

Ideal helps maintain consistent color within each print run; it provides accurate on-line color measurement.

Ideal color measurement reports are integrated into the PrintFlow data base.

Pressing Ideal toolbar displays the PrintFlow color measurement report screen shown below.

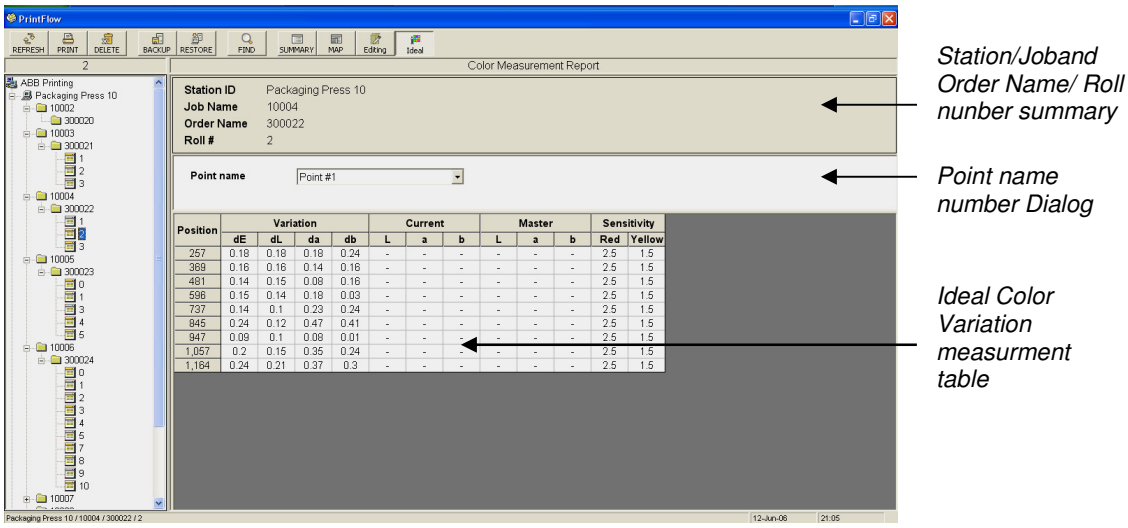


Figure 19: Ideal View

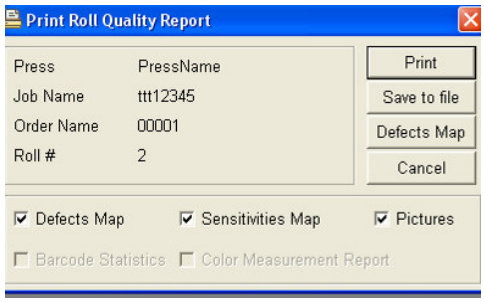
4.5 Printing / Saving a Report

In order to print or save the Roll Report to a file in various formats, after it has been reviewed and edited, proceed as follows:

To print a roll report:

1. Select the roll.
2. Select the content.
3. On the main toolbar, click **Print**.

   The **Print Roll Quality Report** dialog-box appears.

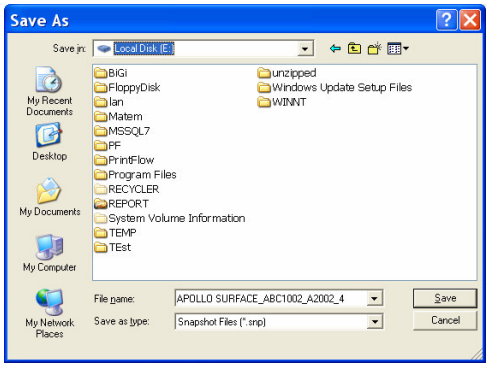


4. Select the output format from the above check boxes.
5. Click Print.

To save a roll report:

1. Click **Save to File**.

   The **Save As** dialog-box opens.



2. Set the filename as required, and click **SAVE.**

   The file is saved.

Save Defect Map

1. Proceed according to steps 1 to 4 above.

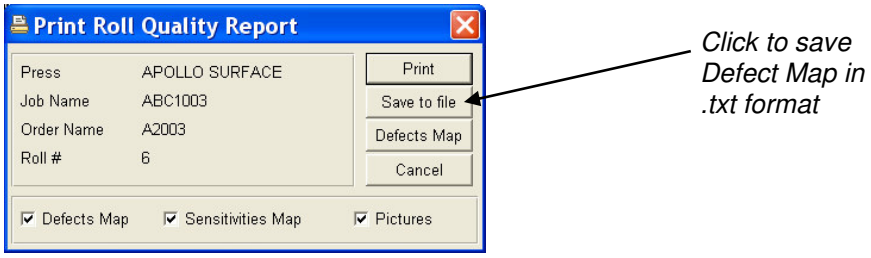


Figure 20: The Defect Map button

2. Click **Defect Map**.
3. Save the file to your computer in .txt format.

4.6 Report Structure

The two figures below show the structure of a printed Roll Report.

The printed Roll Report structure sections shown in Figure 21 and Figure 22 are explained below.

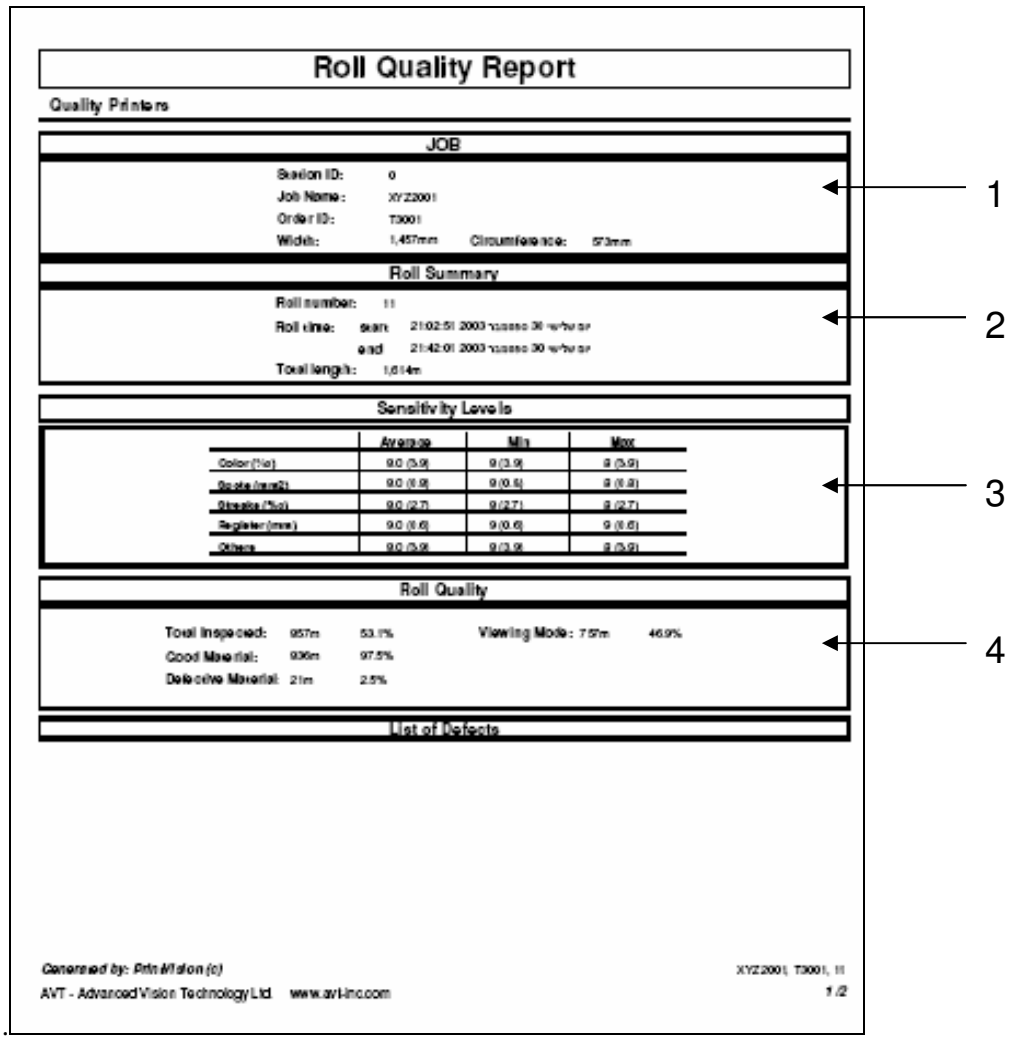


Figure 21: Printed Report Structure-Page 1

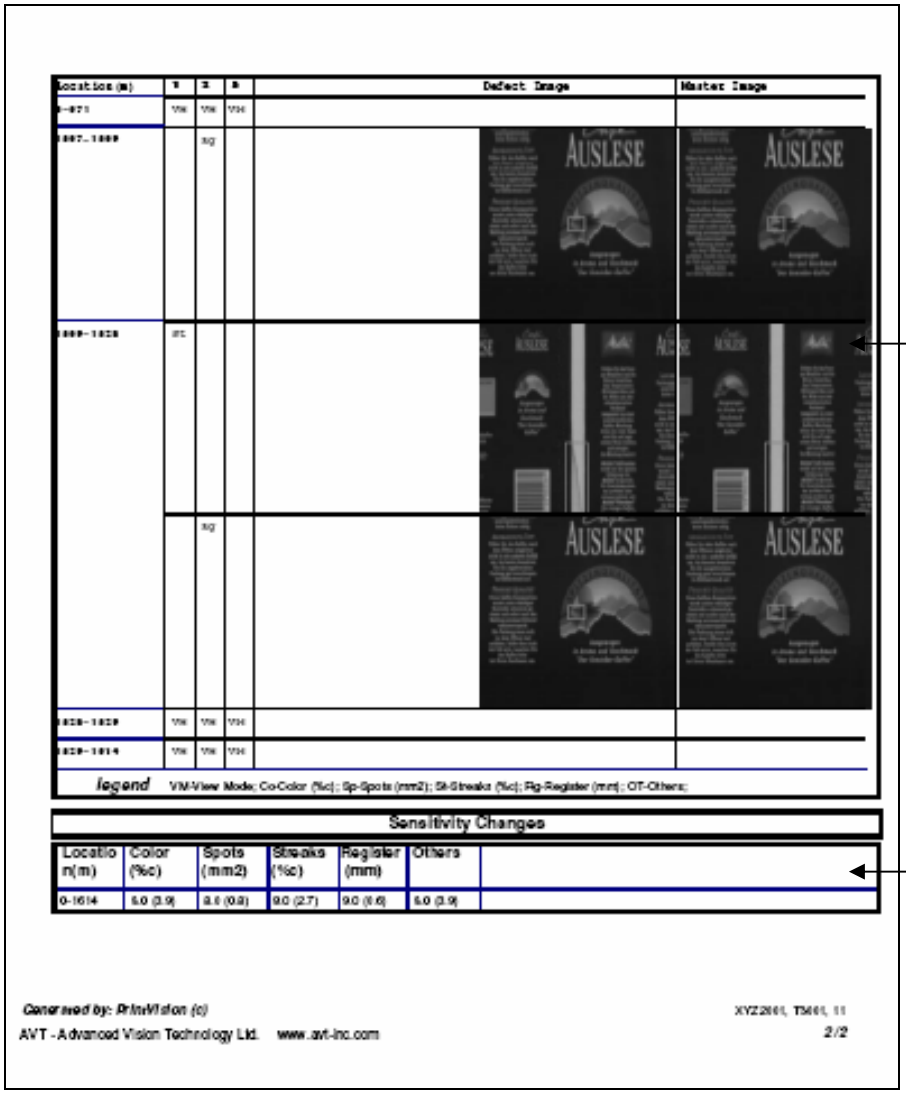


Figure 22: Printed Report Structure-Page2

Table 8: Printed Report Structure sections explanations

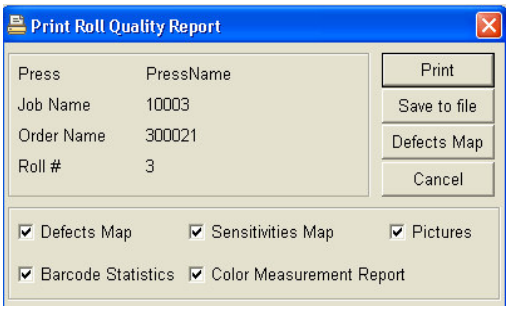
Section	Name	Explanation
1	Job	Job details including the following information: Station ID, Job Name, Order ID, width/circumference
2	Roll summary	Roll summary including the following information: Roll number, start/end times, and total length
3	Sensitivity Summary	Sensitivity Summary including the following information: max, min, and average values
4	Quality Summary	Quality Summary section includes the following information: Totals inspected, good, defective, and “viewing only”
5	List of Defects	List of Defects includes Defect and Master Images; location and type of defect
6	Sensitivity Changes	Sensitivity Changes includes: Table of Sensitivity values throughout the Roll

Barcode Report (Optional)

To print a Barcode report:

1. Select the roll.
2. Select the content.
3. On the main toolbar, click **Print**.

   The **Print Roll Quality Report** dialog-box appears.



4. Click on **Save to file.**
5. Save the file to your computer in .txt format.
6. Double click on the file.
7. The Barcode report appears. (See figure below).

The two figures below show the structure of a printed Ideal report.

The printed Barcode Report structure sections are shown in Figure 23, Figure 24 and are explained in Table 9 below.

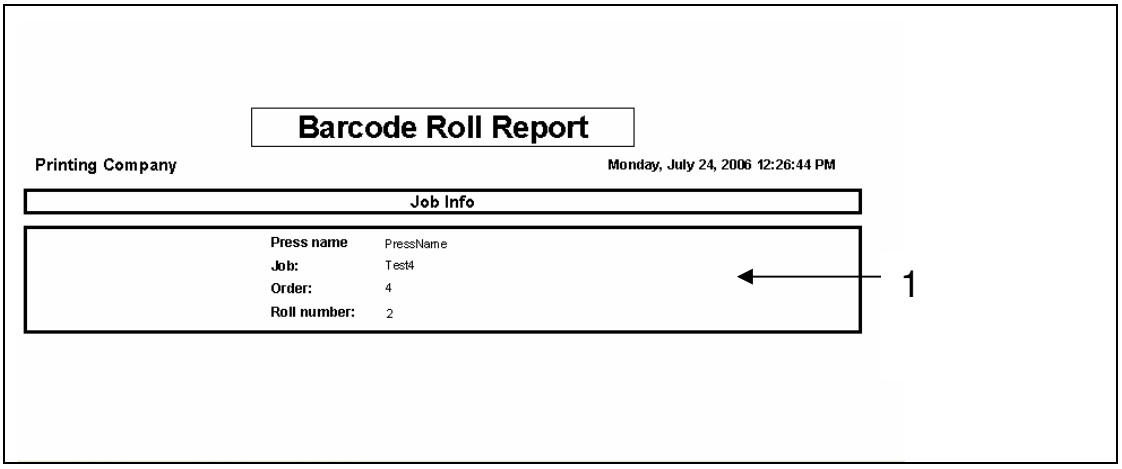


Figure 23: Barcode Report-Page1

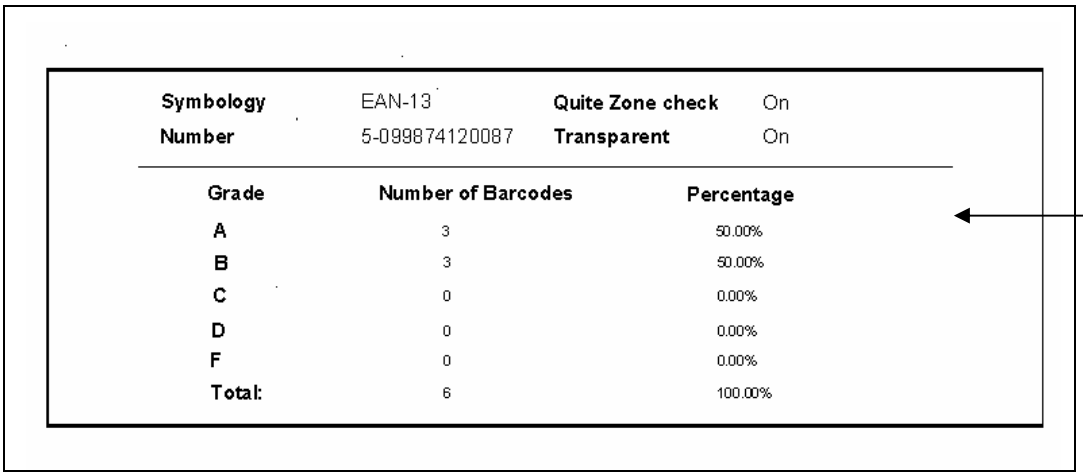


Figure 24: Barcode Report-Page2

Table 9: Printed Report Structure sections explanations

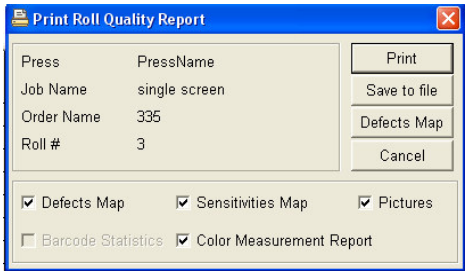
Section	Name	Explanation
1	Job Information	Job details including the following information:, Job Name, Order ID, Roll number
2	Barcode Information	Symbology Number, Grade, Number of Barcodes, Percentage.

Ideal Report (Optional)

To print an Ideal report:

1. Select the roll.
2. Press on **Ideal** icon.
3. Select the content.
4. On the main toolbar, click **Print**.

   The **Print Roll Quality Report** dialog-box appears.



8. Click on **Save to file.**
9. Save the file to your computer in .txt format.
10. Double click on the file.
11. The Barcode report appears. (See figure below).

The two figures below show the structure of a printed Ideal report.

The printed Ideal Report structure sections shown in Figure 25, Figure 26 and are explained in Table 10 below.

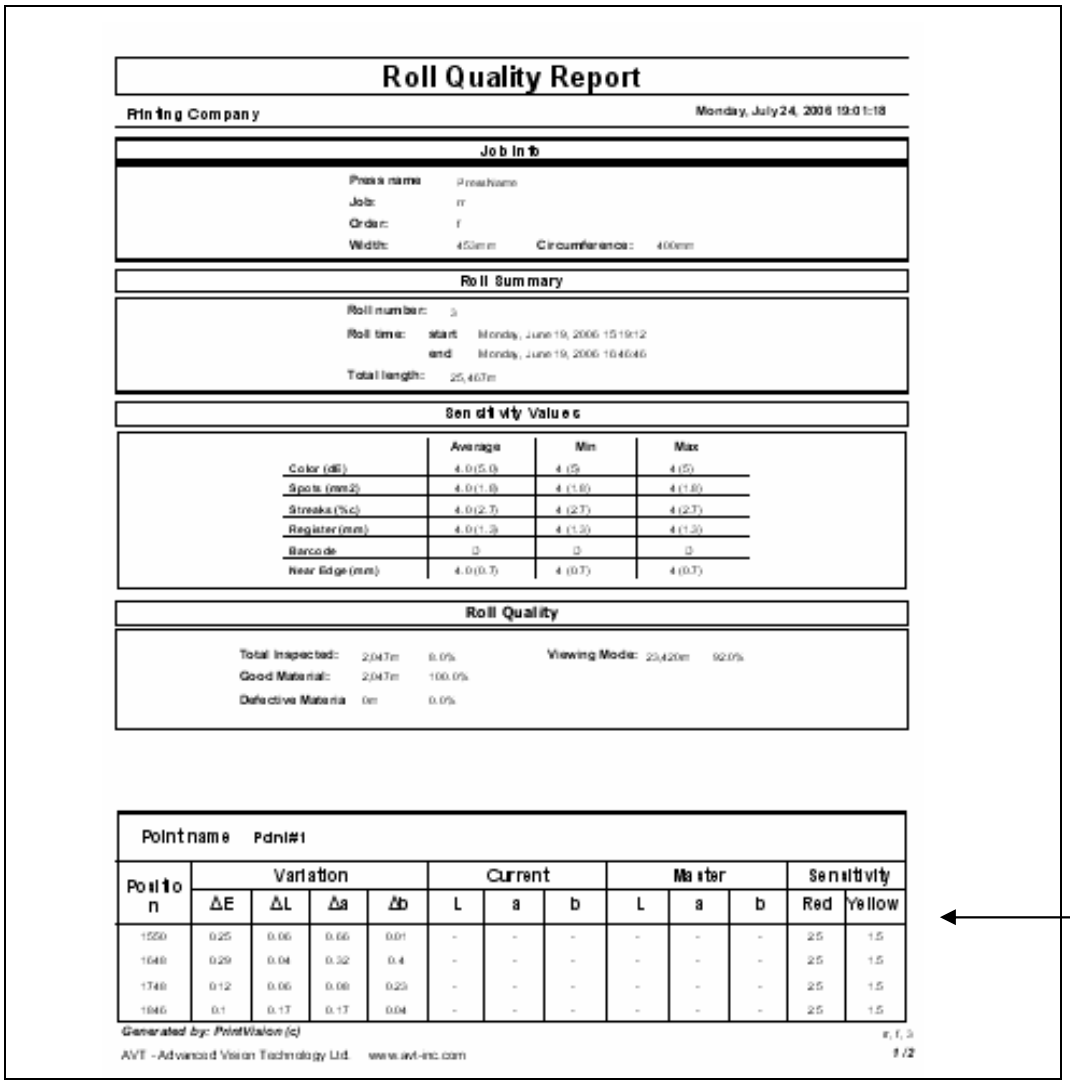
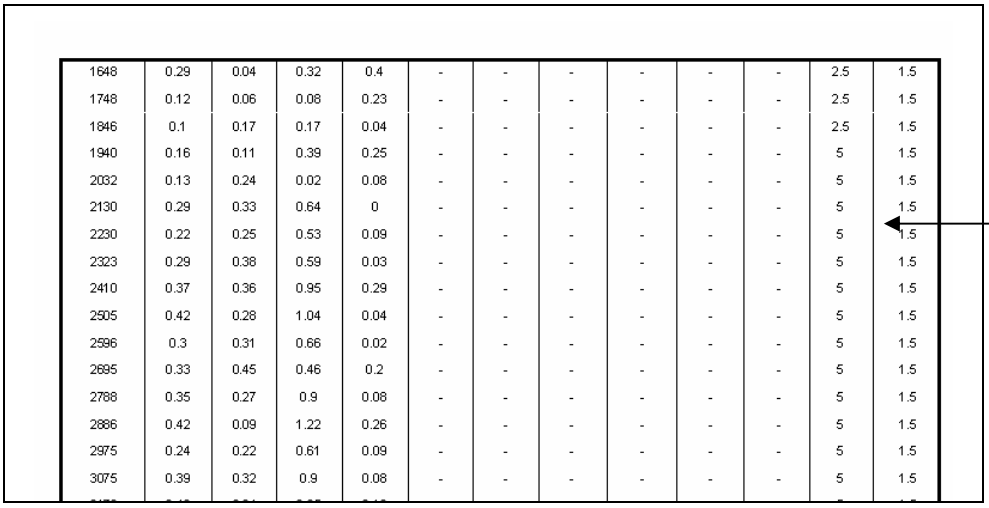


Figure 25: Ideal Report-Page1



1648	0.29	0.04	0.32	0.4	-	-	-	-	-	-	2.5	1.5
1748	0.12	0.06	0.08	0.23	-	-	-	-	-	-	2.5	1.5
1846	0.1	0.17	0.17	0.04	-	-	-	-	-	-	2.5	1.5
1940	0.16	0.11	0.39	0.25	-	-	-	-	-	-	5	1.5
2032	0.13	0.24	0.02	0.08	-	-	-	-	-	-	5	1.5
2130	0.29	0.33	0.64	0	-	-	-	-	-	-	5	1.5
2230	0.22	0.25	0.53	0.09	-	-	-	-	-	-	5	1.5
2323	0.29	0.38	0.59	0.03	-	-	-	-	-	-	5	1.5
2410	0.37	0.36	0.95	0.29	-	-	-	-	-	-	5	1.5
2505	0.42	0.28	1.04	0.04	-	-	-	-	-	-	5	1.5
2596	0.3	0.31	0.66	0.02	-	-	-	-	-	-	5	1.5
2695	0.33	0.45	0.46	0.2	-	-	-	-	-	-	5	1.5
2788	0.35	0.27	0.9	0.08	-	-	-	-	-	-	5	1.5
2886	0.42	0.09	1.22	0.26	-	-	-	-	-	-	5	1.5
2975	0.24	0.22	0.61	0.09	-	-	-	-	-	-	5	1.5
3075	0.39	0.32	0.9	0.08	-	-	-	-	-	-	5	1.5

2

Figure 26: Ideal Report- Page2

Table 10: Printed Report Structure sections explanations

Section	Name	Explanation
1	Ideal Information	Ideal details including the following information:, Point name, position, delta variation, current and master, sensitivity parameters.
2	Ideal Table	Ideal Parameter Table.

4.7 Online Defect Editing

Some customers prefer that the printing operator assume more responsibility to monitor and perform on line roll defect editing in real time.

For these customers AVT offers the Online Defect Editing option.

The Online editing feature provides viewing and editing defects capabilities online on one printing press.

Pressing Online icon displays the figure below showing the On-line defect editing on the press in real time.

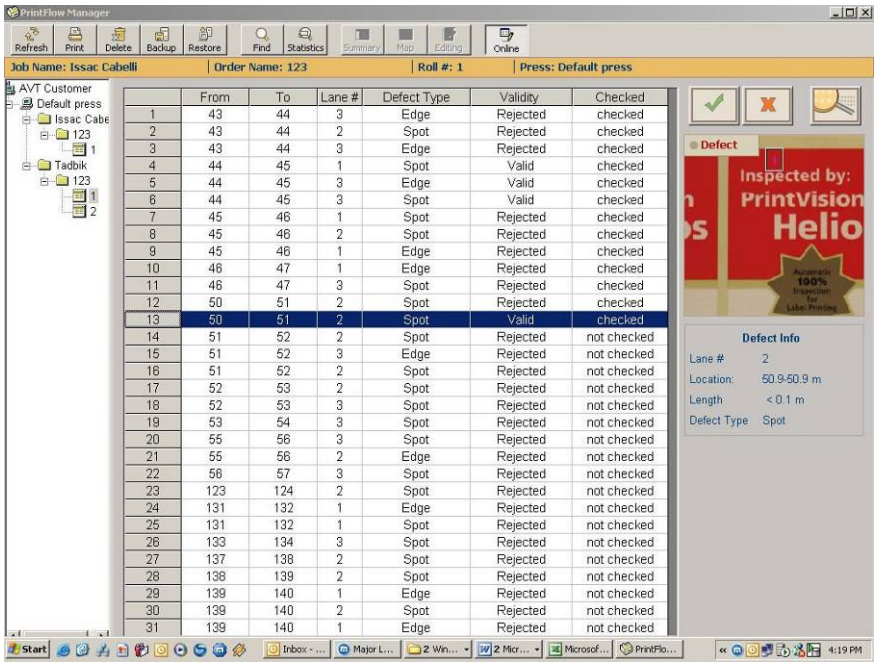


Figure 27: Online defect editing screen

4.8 Some Additional new features

This paragraph describes some of the new Ver.1.4 features that were not discussed in previous chapters.

The following additional PrintFlow Manager new features are described below:

- Default first roll number
- PV and LCCD Reports from Argus

Default first roll number

Some customers prefer selecting default first roll number to be marked 0 instead of 1.

This enable better accountability management of waste rolls material.

Combined Display of Reports (For Argus only)

PrintFlow supports PV and LCCD combined display of roll reports from both Process and Quality cameras. This improvement is relevant only to Argus systems.

5 Press Statistics

NOTE: This chapter applies to PrintFlow Manager only.

The Statistics function lets you extract data of rolls according to your specifications.

Systems available criteria:

1. Systems
2. Orders
3. Dates
4. Time range

The result is a list of rolls, starting with the most recent.

You can save the statistics you extract in various formats.

The available formats are:

- .Microsoft Excel) (.xls)
- Semicolon delineated text file (.txt)

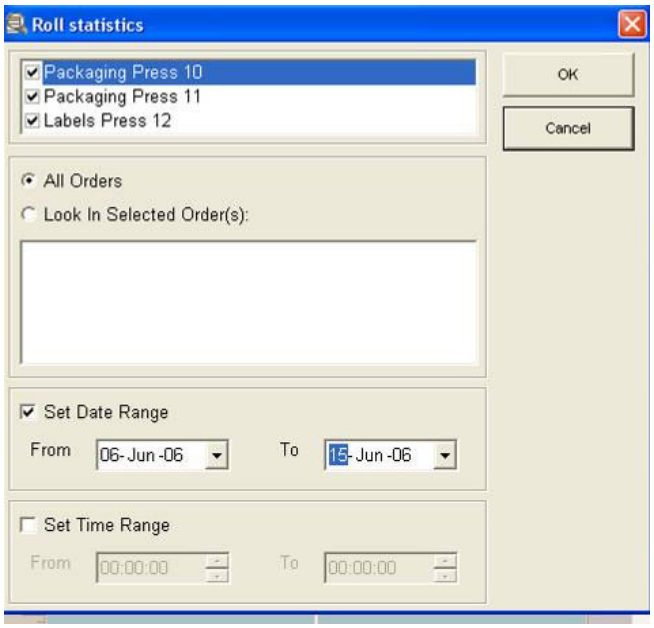
5.1 Extracting Data

You can filter the database to select rolls according to specific criteria, and then you can export the selected rolls and process them using an external program such as Microsoft Excel.

To extract data:

1. On the main toolbar, click **Statistics**.

   The Roll Statistics dialog-box opens.



2. In the top field, select the checkbox for the systems whose statistics you want to view.

3. To include *all* orders for the selected system, select the **All Orders** button.

   -OR-

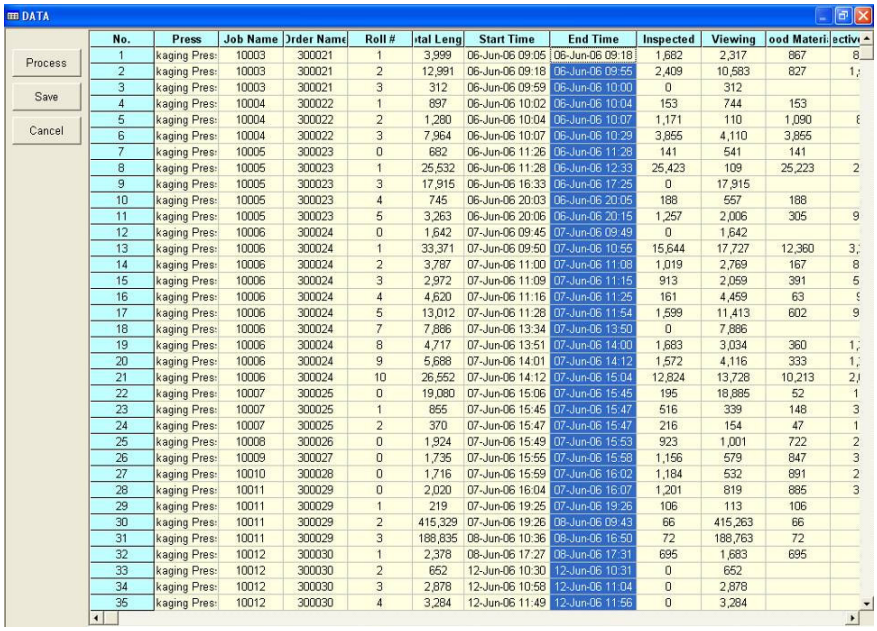
   To include specific orders only, select the **Look in Selected Order(s)**—then select the orders you require.

4. To include only rolls printed within specific dates, select the **Set Date Range** checkbox—then fill the **From** and **To** fields, using the drop-down calendars.

5. To include only rolls printed within a specific time range, select the **Set Time Range** checkbox—then fill the **From** and **To** fields.

6. Click **Ok**.

   The filtered Roll List appears. The list starts with the most recent. Each item in the list is a roll with its data.



No.	Press	Job Name	Order Name	Roll #	tal Leng	Start Time	End Time	Inspected	Viewing	ood Materi	ective
1	kaging Pres	10003	300021	1	3,999	06-Jun-06 09:05	06-Jun-06 09:18	1,682	2,317	867	8
2	kaging Pres	10003	300021	2	12,991	06-Jun-06 09:18	06-Jun-06 09:55	2,409	10,583	827	1,
3	kaging Pres	10003	300021	3	312	06-Jun-06 09:59	06-Jun-06 10:00	0	312		
4	kaging Pres	10004	300022	1	897	06-Jun-06 10:02	06-Jun-06 10:04	153	744	153	
5	kaging Pres	10004	300022	2	1,280	06-Jun-06 10:04	06-Jun-06 10:07	1,171	110	1,090	8
6	kaging Pres	10004	300022	3	7,964	06-Jun-06 10:07	06-Jun-06 10:29	3,855	4,110	3,855	
7	kaging Pres	10005	300023	0	682	06-Jun-06 11:26	06-Jun-06 11:28	141	541	141	
8	kaging Pres	10005	300023	1	25,532	06-Jun-06 11:28	06-Jun-06 12:33	25,423	109	25,223	2
9	kaging Pres	10005	300023	3	17,915	06-Jun-06 16:33	06-Jun-06 17:25	0	17,915		
10	kaging Pres	10005	300023	4	745	06-Jun-06 20:03	06-Jun-06 20:05	188	557	188	
11	kaging Pres	10005	300023	5	3,263	06-Jun-06 20:06	06-Jun-06 20:15	1,257	2,006	305	9
12	kaging Pres	10006	300024	0	1,642	07-Jun-06 09:45	07-Jun-06 09:49	0	1,642		
13	kaging Pres	10006	300024	1	33,371	07-Jun-06 09:50	07-Jun-06 10:55	15,644	17,727	12,360	3,
14	kaging Pres	10006	300024	2	3,787	07-Jun-06 11:00	07-Jun-06 11:08	1,019	2,769	167	8
15	kaging Pres	10006	300024	3	2,972	07-Jun-06 11:09	07-Jun-06 11:15	913	2,059	391	5
16	kaging Pres	10006	300024	4	4,620	07-Jun-06 11:16	07-Jun-06 11:25	161	4,459	63	9
17	kaging Pres	10006	300024	5	13,012	07-Jun-06 11:28	07-Jun-06 11:54	1,599	11,413	602	9
18	kaging Pres	10006	300024	7	7,886	07-Jun-06 13:34	07-Jun-06 13:50	0	7,886		
19	kaging Pres	10006	300024	8	4,717	07-Jun-06 13:51	07-Jun-06 14:00	1,683	3,034	360	1,
20	kaging Pres	10006	300024	9	5,688	07-Jun-06 14:01	07-Jun-06 14:12	1,572	4,116	333	1,
21	kaging Pres	10006	300024	10	26,552	07-Jun-06 14:12	07-Jun-06 15:04	12,824	13,728	10,213	2,
22	kaging Pres	10007	300025	0	19,080	07-Jun-06 15:06	07-Jun-06 15:45	195	18,885	52	1
23	kaging Pres	10007	300025	1	855	07-Jun-06 15:45	07-Jun-06 15:47	516	339	148	3
24	kaging Pres	10007	300025	2	370	07-Jun-06 15:47	07-Jun-06 15:47	216	154	47	1
25	kaging Pres	10008	300026	0	1,924	07-Jun-06 15:49	07-Jun-06 15:53	923	1,001	722	2
26	kaging Pres	10009	300027	0	1,735	07-Jun-06 15:55	07-Jun-06 15:58	1,156	579	847	3
27	kaging Pres	10010	300028	0	1,716	07-Jun-06 15:59	07-Jun-06 16:02	1,184	532	891	2
28	kaging Pres	10011	300029	0	2,020	07-Jun-06 16:04	07-Jun-06 16:07	1,201	819	885	3
29	kaging Pres	10011	300029	1	219	07-Jun-06 19:25	07-Jun-06 19:26	106	113	106	
30	kaging Pres	10011	300029	2	415,329	07-Jun-06 19:26	08-Jun-06 09:43	66	415,263	66	
31	kaging Pres	10011	300029	3	188,835	08-Jun-06 10:36	08-Jun-06 16:50	72	188,763	72	
32	kaging Pres	10012	300030	1	2,378	08-Jun-06 17:27	08-Jun-06 17:31	695	1,683	695	
33	kaging Pres	10012	300030	2	652	12-Jun-06 10:30	12-Jun-06 10:31	0	652		
34	kaging Pres	10012	300030	3	2,878	12-Jun-06 10:58	12-Jun-06 11:04	0	2,878		
35	kaging Pres	10012	300030	4	3,284	12-Jun-06 11:49	12-Jun-06 11:56	0	3,284		

Figure 28: Data List

5.2 Exporting to MS Excel™

If you have Microsoft Excel installed on the PrintFlow Manager computer, you can export PrintFlow data to .xls format and open it in Excel.

Note: If the PrintFlow computer does not have Excel installed, you cannot save in .xls format, but you can save in .txt format that can be imported into Excel or another program. For details see "Saving Data to File, (see paragraph 5.3)"

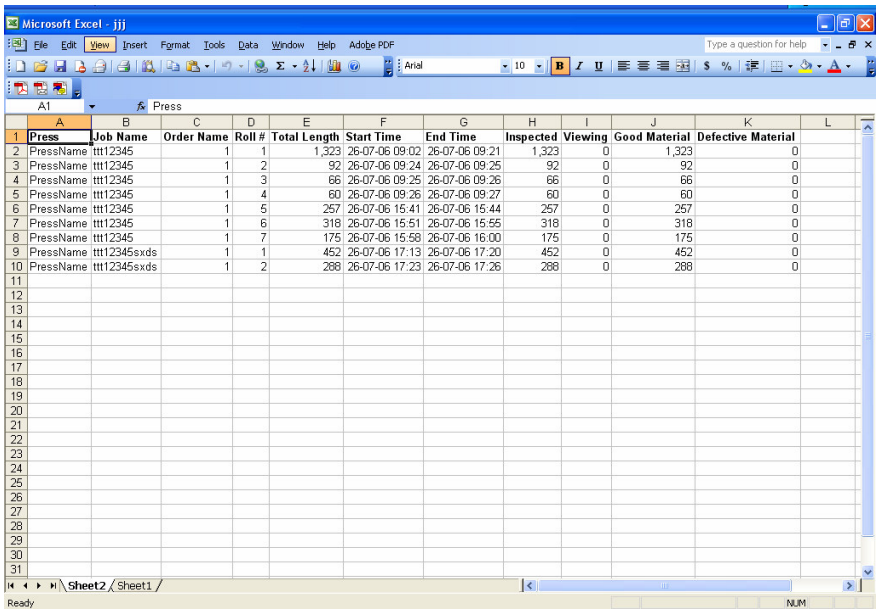
To export data to MS Excel:

1. From the Data List, click **Process**.

   The **Save As** dialog-box appears.

2. Browse to the folder where you want to save the file, type in a filename—then click **Save**.

   The file is saved in .xls format, and opened automatically in MS Excel.



Press	Job Name	Order Name	Roll #	Total Length	Start Time	End Time	Inspected	Viewing	Good Material	Defective Material
PressName	ttt12345	1	1	1,323	26-07-06 09:02	26-07-06 09:21	1,323	0	1,323	0
PressName	ttt12345	1	2	92	26-07-06 09:24	26-07-06 09:25	92	0	92	0
PressName	ttt12345	1	3	66	26-07-06 09:25	26-07-06 09:26	66	0	66	0
PressName	ttt12345	1	4	60	26-07-06 09:26	26-07-06 09:27	60	0	60	0
PressName	ttt12345	1	5	257	26-07-06 15:41	26-07-06 15:44	257	0	257	0
PressName	ttt12345	1	6	318	26-07-06 15:51	26-07-06 15:55	318	0	318	0
PressName	ttt12345	1	7	175	26-07-06 15:58	26-07-06 16:00	175	0	175	0
PressName	ttt12345sxds	1	1	452	26-07-06 17:13	26-07-06 17:20	452	0	452	0
PressName	ttt12345sxds	1	2	288	26-07-06 17:23	26-07-06 17:26	288	0	288	0

Figure 29: MS Excel format display

5.3 Saving Data to File

You can save filtered results as a semicolon delimited text file, in order to import it into another program on a different computer.

To save data to file:

1. From the Data List, click **Save**.

   The **Save As** dialog-box appears.

2. Browse to the folder where you want to save the file, type in a filename—then click **Save**.

   The file is saved in .txt format.

6 Database Functions

This chapter deals with:

- The Refresh function.
- Backup.
- Restore.
- Deleting old data
- Deleting a roll from the database

6.1 Refresh the screen

The **Refresh** button can be used to update the current screen to include changes that have taken place since it was opened.

To refresh the current screen:

- On the main toolbar, click **Refresh**.

  The screen data is updated.

6.2 Database Backup

Creating a backup copy of the current database—and storing it on a different computer—reduces the risk of losing data if the system disk gets damaged.

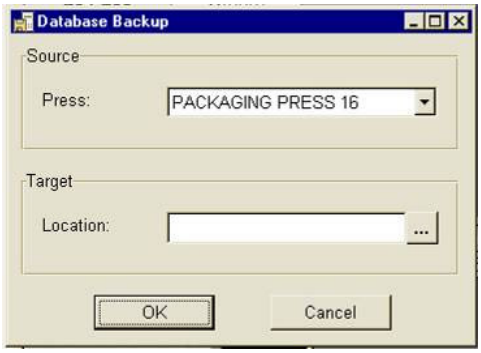
In case of damaged database, you can use the Restore function to restore the data. You may also want to use this function before deleting items from the database.

Important: Depending of the amount of data, the Backup process may take up to several hours. It is important that the AVT system not be in inspection mode during this time.

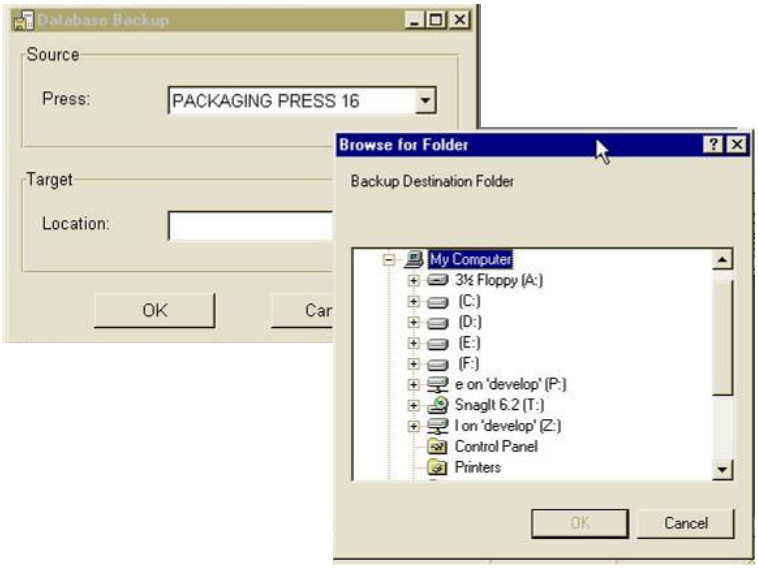
To backup the database:

1. On the main toolbar, click **Backup**.

   The Database Backup dialog-box appears.



2. In the **Source** field, select the required press from the drop-down list.
3. In the **Target** field, use the **Browse** button **[…]** to browse to any location on your network where you wish to save the Backup folder.



4. Click **Ok**.

   The Backup process begins, and the progress bar indicates this. The process may take several hours.

6.3 Restoring Database

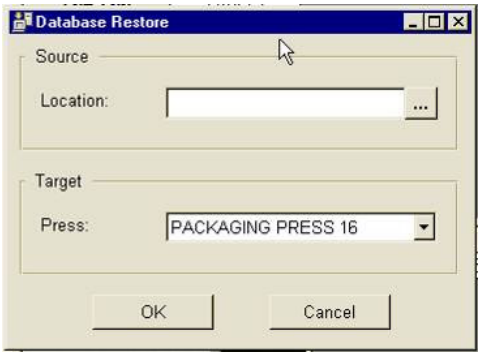
If you have saved a backup of the database, you can restore it. Restoring overwrites the current database files with the stored version.

Important: Depending of the amount of data, the Restore process may take up to several hours. It is important that the AVT system not be in inspection mode during this time.

To restore a Database version:

1. On the main toolbar, click **Restore**.

   The Database restore dialog-box appears.



2. In the **Source** field, use the **Browse** button **[…]** to browse to the location where the backup file is saved.

Important: Make sure that the database you are restoring belongs to this press!

3. In the **Target** field, select from the drop-down list the name of the system (press) whose data you want to restore.
4. Click **OK**.

   The Restore process begins, and the progress bar indicates this. The process may take several hours.

6.4 Deleting outdated data

You can delete outdated data to keep database size down, and to keep the Database Tree more manageable.

To delete outdated data:

1. On the database Tree select the company name, or any press whose data you want to delete.
2. On the main toolbar, click **Delete**.

   The Delete dialog-box appears.
3. From the drop-down calendar, select the oldest date for data you want to keep in the database.

   Warning: All data for the selected press, that is older that the selected date will be permanently deleted!
4. To delete the old data, click **Delete**.

6.5 Deleting a Roll/Order/Job

To delete a Roll/Order/Job:

1. In the Database Tree, select the Roll/Order/Job, as required.
2. On the main toolbar, click **Delete**.

   The Delete Roll/Run/Job dialog-box opens, showing relevant identification information.
3. Click **Delete**.

   The Roll/Order/Job is deleted.