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## Welcome to the first edition of In the Know

In the Know is a bi-monthly newsletter primarily for the SAS user community. It is our response to your suggestions received at the 2002 SAS User Forums - a way to inform and update you about the latest SAS technology and solutions.

In the Know will feature SAS support and services - information on educational programmes and customer support, as well as practical hints and tips. Each issue will also provide you with the latest corporate news and forthcoming events.

Please let us know what you think of this newsletter. We welcome your feedback and suggestions for topics and features that you are interested in.

We hope you enjoy reading In the Know.

## Corporate News

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### Cutting Edge Technology to be Used to Target NHS Fraudsters



Lord Hunt, Minister for Health, announced this month a new partnership between world leading business intelligence software company, SAS UK, and the NHS Counter Fraud Service (CFS), that will provide a much greater capacity to target fraud in the NHS.

Through the partnership, SAS and the NHS CFS will develop software that examines NHS CFS data on pharmaceutical, dental and optical fraud. Using advanced data analysis and visualisation techniques, the software will be able to indicate where in the NHS fraud is most likely to occur.

Lord Hunt said, "Although huge achievements have already been made in reducing fraud against the NHS, there is still work to be done. This is why I am very pleased that we have reached agreement with SAS on this project to develop cutting edge technology to detect NHS fraud. We aim to learn from every example of fraud so that we continuously improve our capacity to detect and stop it." He continued, "We shall be using the most sophisticated technology to target those who would deprive the NHS of the resources it needs for patient care. The reduction in losses already made by the NHS CFS since 1999 and the determination to make further progress are indications that the NHS is better protected against fraud than ever before."

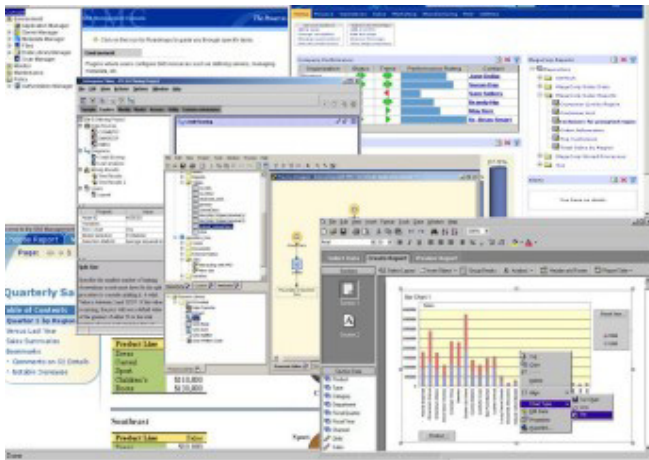
"We are pleased to be playing our part in protecting the NHS' resources from fraud so that they can be spent on patient care" said Phil Bond, CEO of SAS UK "We are the market leader in business intelligence software and shall be linking our own expertise with the specialist counter fraud expertise of those in the NHS CFS. We are confident that the NHS and patients will benefit very considerably from this work."

Jim Gee, Director of the NHS CFS added, "This is a ground breaking agreement involving partnership between our own specialist counter fraud organisation and market leaders in business intelligence software. Very shortly we will have in place a fraud detection system worthy of the NHS in the 21st Century."

For further information on SAS Fraud Solutions: <http://www.sas.com/offices/europe/uk/solutions/fraud.html>

### SAS System 9

Business intelligence (BI) and advanced analytics software are the focus of much interest at the moment. Organisations in all business sectors are focusing renewed interest on corporate data and analysis as the crucial underpinning to accurate decision-making and strategy building. Data volumes meanwhile continue to increase at an alarming rate and users are getting more numerous and more sophisticated in their demands. For SAS professionals this presents the challenge to maintain the data and application integrity and to integrate into other software environments. Consequently, things have been moving fast at SAS, as we develop new software and solutions to help organisations meet their needs in BI and analytics.



**New Interfaces for SAS System 9**

SAS System 9 represents a major redesign of many of the core areas of the SAS System. It is one of the most significant releases we have launched during our 26-year history, and it's set to change the way many organisations integrate, distribute, analyse and use core corporate information and data. Of course your existing SAS data and programs will continue to work without modification - so you will be able to take full advantage of the new features of SAS System 9 without complex migration work. For those of you staying with SAS 8.2 for a while longer - it will not disappear when we release SAS System 9 and there are still many benefits that come with it's latest features - which perhaps you haven't tried out yet. We will look at these in subsequent editions of In The Know.

So how can SAS System 9 change the way you work and your organisation operates? Well, for a start it is much easier to use. We've designed SAS System 9 for

information consumers, decision makers, business and financial analysts, and of course, programmers and systems managers. This will help you be more effective, and enable much wider use of SAS across your whole organisation. We've also made it even more open and modern. We've added new technology standards support, making it quicker and easier to work with all the different software in your organisation. This includes some of the latest Web Services, XML and Metadata standards - for the technically inclined amongst you.

SAS System 9 is also the fastest and most powerful software we have ever developed. It can work on many different SAS jobs simultaneously, which makes it much easier for multiple users to share processing resources and data. This in turn will help you get better value from your existing computer systems, while at the same time producing better intelligence for the whole organisation. We're encouraging everyone to move up to the best version of SAS, during the next 12 months. So, make sure your company doesn't miss out on the latest intelligence!

For further information on SAS System 9 visit <http://support.sas.com/software/9/>

Join us for the SAS System 9 launch at Seugi 21: <http://support.sas.com/usergroups/seugi/seugi21/agenda.html>

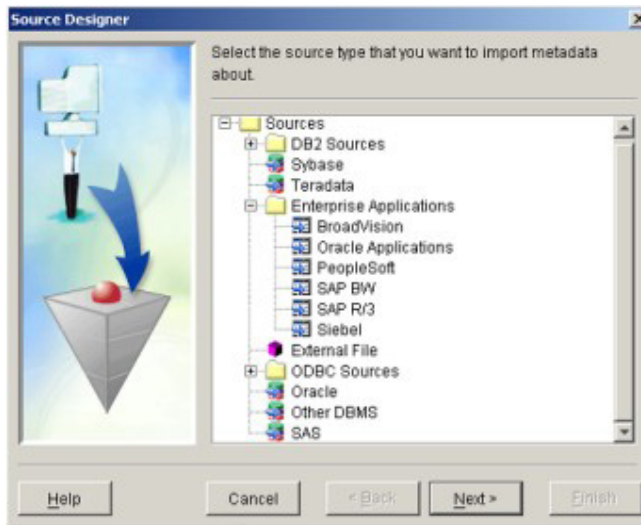
### ETL<sup>Q</sup> - Integrated Data Quality from SAS

The saying "garbage in, garbage out" is as old as the IT business itself. But the sad fact is that data quality remains a major headache for IT professionals. For a number of reasons:

- Organisations collect information from an ever-increasing variety of sources, including legacy and ERP systems, call centres and external providers
- The data comes from incompatible systems, often as a consequence of mergers and acquisitions
- Data entry is inaccurate
- There are no common business rules or standards

The cost of poor data quality is often considerable. For IT, it means additional work and delays for information consumers. For business it means a poor image with customers, lost sales opportunities, reduced efficiency and poor decision-making. Gartner predict that, "Through 2006, more than 50 percent of BI and data warehouse efforts will have

limited acceptance or will fail because of lack of attention to data quality". (Ref: SPA-18-8622, 18 December 2002:Implementing Business Intelligence to Succeed, not Fail).



There is no set definition of data quality but a recent TDWI (The Data Warehousing Institute) survey revealed that data standardisation and verification are the main issues behind failed warehouse projects. For years, IT professionals have said there must be a better way to do things, and now, with the SAS Data Quality Solution there is.

The SAS Data Quality Solution integrates data quality into the extraction, transformation and load (ETL) stages that exist in any Business Intelligence (BI) project. Data quality is therefore "built-in" automating otherwise expensive manual data rectification work.

The SAS Data Quality Solution uses Intelligent Data Integration (IDI) to consolidate legacy and non-legacy data. IDI identifies and corrects data quality problems automatically, working with all data sources and platforms thereby saving time and ensuring accuracy and consistency.

#### Extracting from an application using ETL Studio

SAS gives you the power to retrieve and deliver consistent, accurate and reliable information - a single version of the truth - to the business community.

For further information on Integrated Data Quality from SAS:[http://www.sas.com/technologies/data\\_warehouse/etl.html](http://www.sas.com/technologies/data_warehouse/etl.html)

Join us at the SAS Data Quality Showcase in Marlow on 2nd April

## Support & Services

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### SAS Certification: Enhance Your Skills

Ongoing career development ensures that individuals develop skills and abilities and organisations equip themselves to cope with change and stay at the leading edge. Professional certification provides a motivation to keep that career development moving forward. SAS Certification is a globally recognised professional credential that meets the needs of employers and employees alike in a world where IT skills shortage is the norm.

For employers, certification is a valuable benchmark to apply when hiring new staff. Certification helps increase the corporate knowledge base, providing a source of competitive advantage. For employees, certification means recognition of your skills, demonstrating both SAS knowledge and ability to implement. Of course, this can also mean greater recognition among your professional peers.

The SAS Certification program is growing and the following certification qualifications will be available over the next twelve months: SAS Certified Base Programmer, SAS Certified Advanced Programmer, SAS Certified Application Developer, SAS Certified Warehouse Development Specialist and SAS Certified Warehouse Architect.

Learn more about the SAS Certification programme:<http://www.sas.com/offices/europe/uk/certification/certification.html>

### Customer Support Severity Levels

Customer support is there for the times when you encounter a difficulty while using SAS software, or you simply aren't sure how to achieve something. But there are wide ranges of issues that come up from "I need this fixed now" to "I wonder how I could ...". Severity Levels help to ensure that support issues are prioritised and the most pressing issues dealt with first. The principal aim is to fix problems so that you deliver projects and solutions on time, and the key to achieving this aim is to use the system intelligently - after all, not every problem is "Severity 1".

*What response times can I expect for problems reported by phone?*

All problems reported are handled first by a consultant who works with you to identify and, in many cases, solve the problem. If the consultant cannot immediately resolve the problem, he/she assigns it a tracking number and does additional research or passes it to a specialist. The goals for follow-up are based on the nature and severity of the problem; the consultant makes every attempt to contact the customer within these response times. This table shows the targets for follow-up and frequency of updates for different problems.

Severity Level	Condition	Initial Follow-up*	Frequency of Updates
1	A critical SAS production system is down or does not function at all, and there is no circumvention for the problem; a significant number of customers are affected, and a production business system is inoperable.	2 hours	Every business day
2	A component of SAS is not performing; creating a significant operational impact	4 business hours	Every 2 business days
3	A component of SAS is not performing as documented; unexpected results; circumventable problems; moderate or minor operational impact	24 hours**	Every 3 business days
4	Usage questions; clarification of documentation	24 hours**	Every 10 business days
5	Suggestions; requests for new product features and enhancements	24 hours**	Every 30 business days
<p>*For problems that are assigned to a specialist, "initial follow-up" is defined as the time between when the problem is initially reported and the specialist contacts the customer. For problems that require further research by the consultant who initially received the problem, "initial follow-up" is defined as the time between the initial contact with the consultant and a follow-up call.</p> <p>**Does not include weekend or other non-business days</p>			

Please note: the definition of a problem, its associated priority and the frequency of problem updates may be adjusted based on mutual agreement between consultant and customer. And upon mutual agreement, updates may be made by electronic means rather than by phone.

- To contact us by telephone, call **01628 486933** and ask for Customer Support
- Or LO-CALL from **Ireland - 1850 923 323**
- Available: 0900 - 1730 Monday to Friday excluding Bank Holidays

***What response time can I expect for problems reported electronically?***

Priorities are assigned to problems reported via the web or e-mail, based on the guidelines above. All problems reported electronically receive an immediate automated e-mail confirmation with a problem tracking number. A Technical Support representative responds to the customer by phone or e-mail within 24 hours, with the exception of problems reported on weekends and holidays. Because we cannot guarantee less than 24-hour response on problems tracked electronically, customers are advised to report Severity 1 or 2 problems by phone.

For further information on reporting via e-mail: <http://support.sas.com/techsup/contact/emits.html>

### Using SAS Functions to Manipulate your Data

When planning modifications to SAS data sets, be sure to examine the many SAS functions that are available. SAS functions are pre-written expressions that provide programming shortcuts for many calculations and manipulations of data. SAS functions can be used in DATA step programming statements, PROC SQL and in some statistical procedures. A SAS function can be specified anywhere that you would use a SAS expression, as long as the function is part of a SAS statement. SAS functions also ignore missing values.

#### *How can I use a SAS function to create the average of three variables?*

The assignment statement below uses the MEAN function to calculate the average of three exam scores that are stored in the variables Exam1, Exam2, and Exam3. The function calculates the mean of the three variables that are listed as arguments.

```
AvgScore=mean(exam1,exam2,exam3);
```

#### *How can I convert my data from character to numeric and visa versa using SAS functions?*

To convert CHARACTER values to NUMERIC values you use the INPUT function and to convert NUMERIC values to CHARACTER values you use the PUT function. The form of the INPUT and PUT functions is as follows:

```
INPUT(source,informat)  
PUT(source,format)
```

However, note that the INPUT function requires an informat, whereas the PUT function requires a format. To remember which function requires a format versus an informat, note that the INPUT function requires the informat.

The following SAS code converts a numeric date value to a SAS date value stored as the number of days from 1st January 1960 using the INPUT and PUT functions.

```
Numdate=122599;  
Chardate=put(numdate,z6.);  
Sasdate=input(Chardate,mmdyy6.);
```

Some other useful SAS functions:

- **COMPRESS** Removes specific characters from character expressions
- **LOWCASE** Converts all letters in the argument to lowercase
- **PROPCASE** Upper case the first letter of each word, lowercase the rest
- **SCAN** Returns the nth word from a string
- **SUBSTR** Extracts a sub-string from an argument or replaces a string within an argument
- **TRANSLATE** Replaces specific characters in a character expression with other characters
- **TRANWRD** Replaces or removes all occurrences of a word in a character string
- **TRIM** Removes trailing blanks from character expressions

### Using ODS to Create Customised Output

Using the SAS Output Delivery System (ODS), you can create, customise, and manage HTML output in any operating environment by submitting programming statements. After creating HTML files, you can view them using Internet Explorer, Netscape Navigator, or any Web browser that fully supports HTML 3.2.

ODS gives you new formatting options and makes procedure output much more flexible. With ODS, you can easily create HTML, RTF, PCL, PS, XML, Latex and PDF output, an output data set of procedure results and traditional SAS

listing output. Also, ODS stores your output in its component parts (data and table definition) so that numerical data retains its full precision.

Procedure output is divided into components, or output objects. Depending on the procedure that you run you might have one or several output objects created. For example proc print would create just one output object but proc univariate would produce multiple output objects. ODS stores a link to each output object in the results window. Using ODS programming statements we can control what output objects we are interested in and what ODS destinations we want to send them to.

In order to start creating HTML, RTF, PDF files etc. you will need a few ODS statements to get you started. By default SAS output still goes to the output window. In order to send the output elsewhere you need to open the appropriate destination. The example below turns off the listing destination (the output window) and opens the HTML destination so that it is ready to receive our output. When the HTML destination is closed the class.html file is created and the HTML destination is closed:

```
Ods listing close;
Ods html body='c:\myreports\class.html';
Proc print data=sashelp.class;
Run;
Ods html close;
Ods listing;
```

For more information on ODS statements have a look at the section in the online documentation entitled '*The complete guide to the output delivery system*'.

Each output object can be broken down into two parts. Firstly we have the data component. This is the actual raw numbers and characters, which make up our SAS output. Secondly there is the template component. This is a description of how the data is to be formatted and arranged. ODS uses two different type of templates, style and table.

Style templates are an abstract description of how ODS should display the presentation aspects of a SAS job. This will include things like colour, font size and font face.

Table templates are used by ODS to control tabular output. This includes things like the text and order of column headers, column ordering and formats for data. Because not all output from SAS procedures can be fitted into a generic table definition there are some procedures that do not use a table template. This includes output from Proc print, proc report and proc tabulate.

Even though these procedures don't use table templates you can still customise the style aspects of your output by using the STYLE= option. The example below right justifies the three variables as well as changing the background colour to red and the font style to italic:

```
ods html body='c:\myreports\class.html';
proc print data=sashelp.class;
var name age height / style=[just=right FONT_STYLE=italic background=red] ;
run;
ods html close;
```

Proc template can be a tricky procedure to get to grips with but it does give you a very powerful tool with which you can customise your output. For all things ODS you should visit <http://support.sas.com/rnd/base/index-ods-resources.html> , which is a treasure trove of sample code, FAQ's and tips and tricks. For proc template queries view the FAQ at <http://support.sas.com/rnd/base/topics/templateFAQ/Template.html>.

Below are five common ODS queries that we often receive in Customer Support:

- 1. When using the RTF destination Can I get my page numbers in page X of Y format?***
- 2. How can I add a hyperlink to my title?***
- 3. How can I add a background image to the current HTML PAGE?***
- 4. Is there a way to increase the size of the cells in the table?***
- 5. How can I specify a place to break my labels in HTML?***

## 1. When using the RTF destination Can I get my page numbers in page X of Y format?

You can add RTF code in the TITLE or FOOTNOTE statement. Below is an example:

```
ods listing close;
ods rtf file="temp.rtf";
proc print data=sashelp.class;
footnote j=r "{field{\*\fldinst {\b\i PAGE }}}\~{\b\i of}\~{\field{\*\fldinst{\b\i
NUMPAGES }}}";
run;
proc print data=sashelp.class;
run;

ods rtf close;
```

## 2. How can I add a hyperlink to my title?

Adding a hyperlink in the title can be done several ways. One way is to add the hyperlink in the TITLE statement. This is shown in example 1. The benefit of this method is that you can specify a different hyperlink for each title. This will only make the specified title a hyperlink.

Starting with Release 8.1, you can add a hyperlink individually in a TITLE statement by using the LINK= option. See example 2.

Another approach would be to use the URL= attribute within the style element SystemTitle. Using this approach, every title would specify the same the same anchor to go to, and every title would be a hyperlink. See example 3.

```
/* example 1*/
title '<a href="http://www.sas.com">this is a title</a>';

/* example 2*/
title link="http://www.sas.com/" "this is a test";

/* example 3*/
proc template;
define style styles.test;
parent=styles.default;
style systemtitle from titlesandfooters /
URL='http://www.sas.com';
end;
run;
```

## 3. How can I add a background image to the current HTML PAGE?

To add a background image to the HTML page, the BACKGROUNDIMAGE= attribute can be used within the style element Body:

```
proc template;
define style styles.background;
parent=styles.default;
Style Body from Document /
backgroundimage='!\moo4.gif';
end;
run;
```

## 4. Is there a way to increase the size of the cells in the table?

To increase the size of the cells, the CELLWIDTH attribute can be specified to provide the desired width. This can be specified in the Table style element. The argument is specified in pixels.

```
proc template;
define style styles.test;
parent=styles.default;
style Data from Cell /
cellwidth=100;
end;
run;
```

### 5. How can I specify a place to break my labels in HTML?

To specify a place to break labels in the HTML file, use the <BR> tag where you want the breaks to occur:

```
ods html body='temp.html';

proc print data=sasuser.class label;
label sex='<Div>this is<br>label for<br>sex</Div>';
run;

ods html close;
```

## Events

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### SAS Data Quality Showcase – Marlow, 2 April

A morning-only event designed for SAS business analysts, data warehouse administrators, IT data management specialists, and systems managers. It will include a high-level introduction and detailed demonstrations showing how the SAS data quality solution works. Delegates will also get practical advice about how to deploy data quality software within their organizations with the minimum pain.

For further information on the SAS Data Quality Showcase:  
[http://www.sas.com/offices/europe/uk/events/data\\_quality\\_welcome.html](http://www.sas.com/offices/europe/uk/events/data_quality_welcome.html)

### Seugi 21 – Vienna, 17-19 June

Seugi is the premier event for enterprise intelligence, with technology and business streams running in parallel. Seugi 21 begins on 17 June with SAS in the Board Room, which features presentations by and for executives, senior management and decision-makers. SAS in Action is the focus on the second day and features SAS customers describing in detail how their work with SAS adds "return on intelligence" to the corporate equation.

SAS Technology Expertise is the focus for the final day, 19 June and is the technology-focused stream with presentations from SAS, customers and partners on cutting-edge technologies as applied in the field. Topics include: migration to SAS System 9; data quality; extraction, transformation and loading; data warehouse infrastructure and architecture; and advanced analytics.

For further information on seugi 21, please visit: <http://support.sas.com/usergroups/seugi/seugi21/>

For a full listing of SAS UK events, please visit: <http://www.sas.com/offices/europe/uk/events/index.html>

### SAS supports the 2003 Special Olympics World Summer Games



SAS, the world's largest privately owned software company, will sponsor the 2003 Special Olympics World Summer Games, which will be held in Ireland in June. It will mark the first time that the event has been held outside the United States.

The games, held every four years, will be the largest sporting event in the world in 2003. Founded in 1968, Special Olympics gives people with mental disabilities the opportunity to participate in a year-round sports training and competition program. SAS' sponsorship will help support the 7,000 Special Olympics athletes, 3,000 coaches and 28,000 family members from 160 international delegations who will gather in Ireland in June 2003.

In addition to financial support for the games, SAS will provide and support a database containing information on each athlete participating in the games. The database will be accessible to anyone with a Web browser and will enable searches by name, program or sport. It will contain profiles of athletes and coaches in each of the World Games' 18 official summer sports and demonstration sports. As well as offering instant access to athlete information to those who are unable to attend the event, the application will be widely used by both the national and international media covering the event. This application was developed by SAS to support the 1999 Special Olympics World Games, which were held in North Carolina near SAS' world headquarters. It will be updated to include the latest technology available from SAS.

"The best way to understand the Special Olympics movement is to learn more about the athletes, and that's what the participant database is all about," said Mary Davis, 2003 World Games CEO. "It makes all that information easily available and tells the true story of the Special Olympics movement. We are truly grateful to SAS for providing this key resource."

"We are excited to be supporting the 2003 Special Olympics World Games in Ireland," said Dr. Jim Goodnight, president and CEO of SAS. "The athletes have so much to be proud of, and if SAS can help convey their exhilaration and wonderful sense of achievement and self-fulfillment through the participant database, then we are indeed honoured."