

Paper 025-2011

Global Risk Management: How SAS® Enterprise GRC Manages Nonfinancial Risk in a Distributed Enterprise

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ABSTRACT

SAS Enterprise GRC (governance, risk management, and compliance) is a SAS solution to help customers automate the management of nonfinancial risks (for example, strategic risks, operational risks, reputational risks, and so on), compliance, and internal audit processes. This paper depicts the scenario of a global bank with several branches in different countries (U.S., China, Saudi Arabia, and Japan): HQ sets up a multilingual environment; clerks in local offices input loss data in different languages; language-specific e-mail messages are sent in the approval process; the loss data are collected and assembled in HQ and finally generated into different language reports.

INTRODUCTION

WHAT'S GRC?

GRC is an integrated, holistic approach to organization-wide governance, risk, and compliance, ensuring that an organization acts ethically correct and in accordance with its risk appetite, internal policies and external regulations through the alignment of strategy, processes, technology, and people, thereby improving efficiency and effectiveness. This definition is translated into a frame of reference as below.

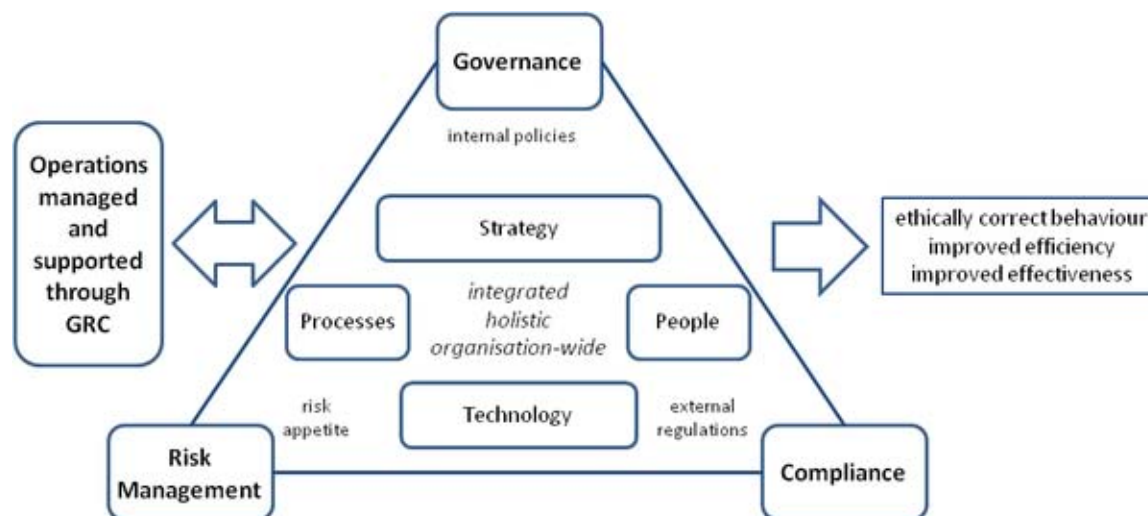


Figure 1. Frame of Reference for GRC Research

Nonfinancial risk such as operational risk is an important aspect of GRC management.

WHAT IS GRC SOLUTION?

GRC solution is a type of application used to automate the management of governance, risk management, and compliance data. There are many challenges for a GRC solution used in a distributed enterprise, including the following:

- Clerks in different countries hope to see the product with their own languages.
- Clerks in Saudi Arabia hope to see layout of the product rendering from right to left.
- Clerks in different countries can use date, time, number, and currency formats with local conventions.
- Clerks in a branch are permitted only to manipulate data within their own region.

- Internal control rules in different countries are also different. Clerks should be able to customize workflows to fit various rules.
- Different branches have different business structures.

WHAT IS SAS ENTERPRISE GRC?

SAS Enterprise GRC is a user-friendly, Web-based GRC solution by SAS that automates the management of governance, risk, and compliance data across the enterprise within a single integrated platform.

SAS Enterprise GRC facilitates the entry, collection, transfer, storage, tracking, and reporting of operational losses, gains, recoveries, and key risk indicators (KRIs) that are drawn from multiple locations across an organization.

It can also be used to do the following:

- Conduct audits
- Manage policies
- Conduct risk and control assessments
- Test controls
- Investigate incidents
- Create and track issues and develop action plans
- Scenario analysis

Event ID	Summary Description	Event Type	Is Active?	Event Description
1 13284	الداخلية الاحتيال	Loss/Profit	Yes	استخدم موظفو معلومات سرية بشأن صفقة مصرفية استثمارية لتداول الأوراق المالية
2 13283	内部不正行為	Loss/Profit	Yes	従業員は、投資のインサイダー情報を使用して 銀行取引、有価証券を交換する
3 13247	Internal Fraud	Loss/Profit	Yes	Employees used insider information on investment banking deal to trade securities.

Figure 2. Screenshot of SAS Enterprise GRC

SAS Enterprise GRC is powerful and able to support multiple-language deployment and implementation for a distributed enterprise very well. Let us see it from the following scenario.

A SCENARIO OF A GLOBAL BANK

iFinance, a global bank, owns branches in four countries, including the U.S., China, Saudi Arabia, Japan, and headquarters in the U.S. iFinance uses SAS Enterprise GRC to manage loss incidents, including the process of creation, investigation, validation, and reporting.

iFinance has various business lines as Figure 3 shows.

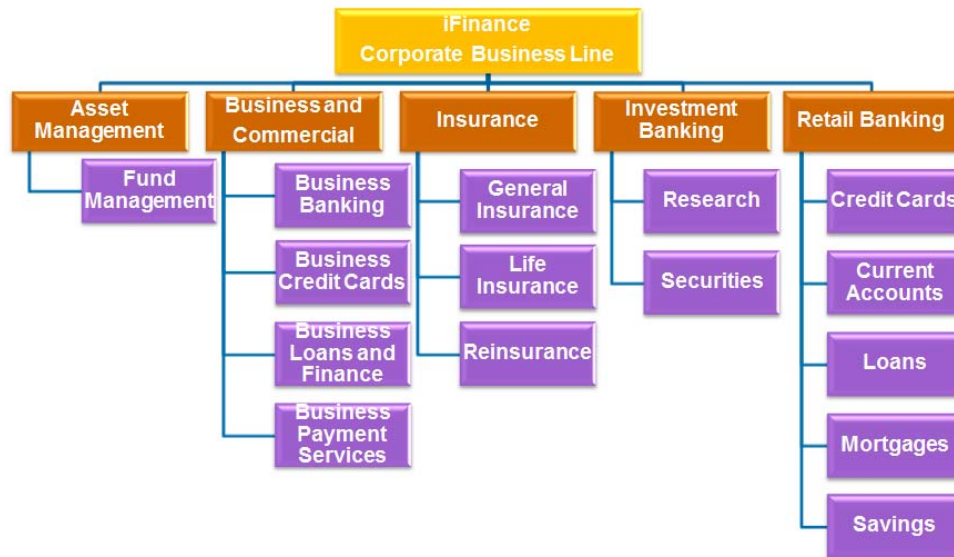


Figure 3. iFinance Corporate Business Line

In 2010, a rogue trader in the U.S branch uses insider information to make trades on securities. iFinance is fined \$200,000 by Securities and Exchange Commission accordingly. Similar incidents also occur in the China, Japan, and Saudi Arabia branches. They are fined 200,000 Chinese Yuan, 200,000 Japanese yen, and 200,000 riyal respectively.

Branch	Loss Amount
U.S.	200,000 Dollars
China	200,000 Chinese Yuan
Japan	200,000 Japanese Yen
Saudi Arabia	200,000 Riyal

Let us see how iFinance makes use of SAS Enterprise GRC to manage those incidents.

INCIDENT MANAGEMENT PROCESS

This is a chart to show the management process of how incidents are tracked and reported.

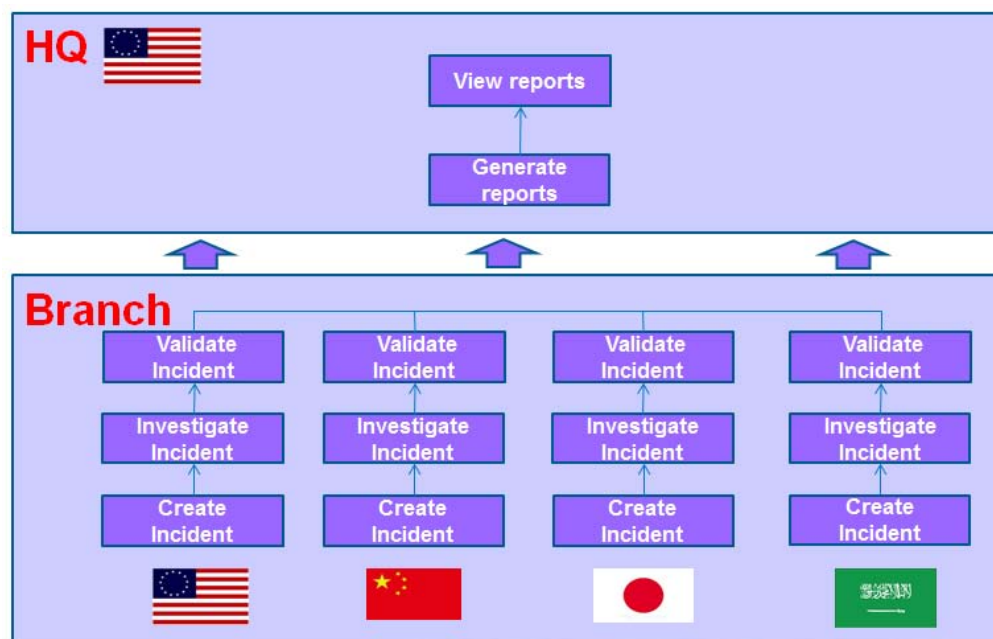


Figure 4. Incident Management Process

The incident management process is completed using the following five-phase steps in SAS Enterprise GRC:

1. Setup Environment

The administrator in headquarters is responsible for setting up a multilingual environment and preparing all data, such as all types of workflows and thresholds in SAS Enterprise GRC.

2. Create Incident

Incident creators in each branch discover an event has occurred and create an incident.

3. Investigate Incident

Incident investigators in each branch accept the incident, investigate the incident, and provide details about the following items:

- financial and nonfinancial effects
- recoveries
- allocations
- causes
- failed controls

One or more investigators can be involved in this stage to capture the required data. After all information has been gathered by all parties, the incident is sent for validation.

4. Validate Incident

Incident validators in each branch review and validate the incident. One or more validators can be involved in this stage. The validation process repeats until the responses have been verified at all workflow stages. After all required validators have approved the incident details, the incident is fully validated.

5. View Report

The reports are generated and viewed by managers. Please note that clerks in the U.S., China, Japan, and Saudi Arabia will create, investigate, and validate incidents respectively. Let us look at each step in detail.

1) SETUP ENVIRONMENT

First of all, the administrator in headquarters sets up the environment and prepares all the data, including users to log in, exchanges rates, and workflow. After all the data is ready, they can be viewed in Web pages.

1. Users

Here is the Web page to view users. Users with different roles are listed.

Users			
	User ID ▲	E-mail Address	Title
1	Deanna	deanna@orionstar.com	Deanna - Administration
2	Gloria	glory@orionstar.com	Gloria - Allocation and Recovery Approval,Cause Ma
3	Lisi	lisi@orionstar.com	Lisi - Incident Investigation
4	Mike	mike@orionstar.com	Mike - Central Risk Management
5	Robert	robert@orionstar.com	Robert - Incident Management Validation
6	Victor	victor@orionstar.com	Victor - Incident Creation

Figure 5. View Users

2. Exchange rates

As the base currency is the euro, exchange rates are provided to convert from US dollar to euro, from Chinese Yuan to euro, from Japanese yen to euro and from riyal to euro. Their usage will be introduced later.

Exchange Rates				
	Effective From ▼	Exchange Rate	To Currency	From Currency
1	April 1, 2011 12:00:00 AM EDT	1.361600 USD	EUR	
2	April 1, 2011 12:00:00 AM EDT	9.043100 CNY	EUR	
3	April 1, 2011 12:00:00 AM EDT	5.106200 SAR	EUR	
4	April 1, 2011 12:00:00 AM EDT	112.875800 JPY	EUR	
5	March 1, 2011 12:00:00 AM EST	1.361600 USD	EUR	
6	March 1, 2011 12:00:00 AM EST	9.043100 CNY	EUR	
7	March 1, 2011 12:00:00 AM EST	112.875800 JPY	EUR	
8	March 1, 2011 12:00:00 AM EST	5.106200 SAR	EUR	

Figure 6. View Exchange Rates

3. Workflows

Workflow determines business processes. Business processes in different countries are different. Their usage will also be introduced later.

Save Cancel

Operational Point (US)

Risk Event Type: (None Selected)

Management Organization: IFinance > Investment Banking > Securities

Geography: Americas > North America > United States

Product: (None Selected)

Process Type: (None Selected)

Validation Stages (1)

Add Management Validation Stage... | Add Risk Validation Stage...

Stage	Name	Validation Stage ID	Source System	Applies to	Stage Type	Minimum Threshold	Maximum Threshold	Validators	Order	Delete
1	Validation Stage for Securities Department	10060	Monitor	Near Misses, Gains, Losses	Management Validation			Robert - Incident Management Validation		X

Figure 7. View Workflows

2) CREATE INCIDENT

After the environment is ready, incident creators in each branch will enter loss incident in this Web page.

Incident creators specify the detail information of the incident, including a short description of the event, discovery date, and estimated amount, in SAS Enterprise GRC.

SAS Enterprise GRC • Create Incident

Save and Submit for Investigation Cancel

Expand All Sections

Create → Investigate → Validate

* Operational Point (US)

* Management Organization: IFinance > Investment Banking > Securities

* Geography: Americas > North America > United States

* Details

Event Type: Loss/Profit

Summary Description: Internal Fraud

Discovery Date: 12/3/2010 (mm/dd/yyyy)

Start Date: 12/3/2010 (mm/dd/yyyy)

End Date: 12/3/2010 (mm/dd/yyyy)

Estimated Amount: 200000 USD

Estimated Amount (EUR): 149,611.01

* Customer Complaint: ☐ Yes ☒ No

Steps Taken:

Attachments for Steps Taken: [Add...]

Figure 8. Create Incident

1. Graphical user interface

When the American clerks login, they can view the English Web page ①. The Chinese ②, Japanese ③, and Arabic ④ clerks can also view Web pages with their native languages. For the Arabic Web page, please note that what has changed is more than the language. Layout of the whole webpage renders from right to left in accordance with their convention.

Furthermore, clerks can also input data ⑤ in their native languages.

SAS Enterprise GRC • Create Incident

Save and Submit for Investigation Cancel

Expand All Sections

Create → Investigate → Validate ①

Operational Point (US)

Management Organization: IFinance > Investment Banking > Securities
Geography: Americas > North America > United States

Details

Event Type: Loss/Profit
Summary Description: Internal Fraud
Discovery Date: 12/3/2010 (mm/dd/yyyy)
Start Date: 12/3/2010 (mm/dd/yyyy)
End Date: 12/3/2010 (mm/dd/yyyy)
Estimated Amount: 200000 USD
Estimated Amount (EUR): 149,611.01
Customer Complaint: ☐ Yes ☒ No
Steps Taken:

Attachments for Steps Taken: [Add...]

SAS Enterprise GRC • 创建特定事件

保存并提交以供调查 取消

展开所有区域

创建 → 调查 → 批准 ②

操作点

管理组织: (未选择)
地理位置: (未选择)

详细信息

事件类型: (未选择)
汇总说明:
发现日期: 2010-12-6 (yyyy-mm-dd)
开始日期: 2010-12-6 (yyyy-mm-dd)
结束日期: 2010-12-6 (yyyy-mm-dd)
估计金额: EUR
估计金额 (EUR):
客户投诉: ☐ 是 ☒ 否
采取的步骤:
所采取步骤的附件: [添加...]

SAS Enterprise GRC • インシデントの作成

保存して調査にサブミット キャンセル

すべてを展開

作成 → 調査 → 検証 ③

オペレーショナル ポイント

部署: (選択されていません)
地理: (選択されていません)

詳細

イベントの種類: (未選択)
要約説明:
発見日: 2010/12/06 (yyyy/mm/dd)
開始日: 2010/12/06 (yyyy/mm/dd)
終了日: 2010/12/06 (yyyy/mm/dd)
見積り額: EUR
見積り額 (EUR):
顧客の苦情: ☐ はい ☒ いいえ
措置:
措置の派付: [追加...]

SAS Enterprise GRC • إنشاء حادث

ملف وإرسال للتحقيق إلغاء

توسيع جميع الأقسام

إنشاء → تحقيق → التصديق ④

نقطة التشغيل

الهيئة الإدارية: (لم يتم تحديد شيء)
الجغرافية: (لم يتم تحديد شيء)

التفاصيل

نوع الحادث: خسارة/ربح
وصف الشخص: ⑤
تاريخ الاكتشاف: 2010/12/6 (yyyy/mm/dd)
تاريخ البداية: 2010/12/6 (yyyy/mm/dd)
تاريخ النهاية: 2010/12/6 (yyyy/mm/dd)
المبلغ المقرر: EUR
المبلغ المقرر (EUR):
شكوى العميل: ☐ لا ☒ نعم
الخطوات التي تم اتخاذها:
مرفقات الخطوات المتوقعة: [إضافة...]

Figure 9. Four Various Languages

2. Currency conversion

The estimated amount of loss incident can be specified in the local currency. It need be converted into the base currency for reporting purposes. Exchange-rate data used for this conversion have been prepared in advance by the administrator.

When a clerk in the U.S. branch enters a monetary value in dollars, the value is automatically converted to the corresponding amount in the base currency (euro). When a clerk in the China branch enters a monetary value in CNY, Chinese yuan, it is converted automatically.

Actually, losses can be entered in any currency. However, for reporting purposes, the amount must be reported in the base currency. The euro is the base currency in this example. The base currency is specified and configured when setting up the system.

The screenshot shows a web form titled "Details" with the following fields and values:

- Event Type:** Loss/Profit (dropdown menu)
- * Summary Description:** Internal Fraud (text area)
- * Discovery Date:** 12/3/2010 (calendar icon, format: mm/dd/yyyy)
- Start Date:** 12/3/2010 (calendar icon, format: mm/dd/yyyy)
- End Date:** 12/3/2010 (calendar icon, format: mm/dd/yyyy)
- * Estimated Amount:** 200000 (text input, currency: USD dropdown)
- Estimated Amount (EUR):** 149,611.01 (text input, highlighted with a purple box)
- * Customer Complaint:** Yes (radio), No (radio, selected)
- Steps Taken:** (text area)
- Attachments for Steps Taken:** [Add...] (link)

Figure 10. Convert from U.S. Dollar to Euro

*** Details**

Event Type: Loss/Profit

* Summary Description: Internal Fraud

* Discovery Date: 12/3/2010 (mm/dd/yyyy)

Start Date: 12/3/2010 (mm/dd/yyyy)

End Date: 12/3/2010 (mm/dd/yyyy)

* Estimated Amount: 200000 CNY

Estimated Amount (EUR): 22,116.31

* Customer Complaint: ☐ Yes ☒ No

Steps Taken:

Attachments for Steps Taken: [Add...]

Figure 11. Convert from Chinese Yuan to Euro

3. Security mechanism

As we know, in a distributed company, the loss data in one branch are confidential even for other branches. This is to say, clerks in the headquarters and branches can manipulate loss data only within their permission. Access control in geography dimension can be leveraged to implement this.

This screenshot shows that clerks in the headquarters are permitted to view and manipulate the four incidents from all branches. However, American clerks are permitted only to manipulate data in U.S. branch and Chinese clerks are permitted to manipulate data only in the China branch. That is logical and necessary.

Actually, SAS Enterprise GRC offers three types of security to meet the complicated and flexible requirements in the real world: authentication, identification, and authorization.

SAS Enterprise GRC • Incidents

Log Off admin | Preferences | Help

Object ID All Objects Go

Home Incident Management Risk Management Scenarios Control Testing Audit Management Policy Management KRI

Issues and Action Plans Business Structure Financial Data Administration Reports

Incidents Financial Effects Direct Recoveries Insurance Recoveries Event Validation Workflow Financial Effect Validation Workflow Allocation Validation Workflow Recovery Validation Workflow Cause Validation Workflow Issue Thresholds

Filter by Operational Area Edit | Clear | Favorites

Management Organization: (None Selected)

Geography: (None Selected)

Incidents	Event ID	Summary Description	Event Type	Is Active?	Event Description
1	13363	内部欺诈	Loss/Profit	Yes	内部欺诈
2	13284	الاحتيال الداخلي	Loss/Profit	Yes	استخدم موظفو معلومات سرية بشأن صفقة مصرفية استثمارية لتداول الأوراق المالية
3	13283	内部不正行為	Loss/Profit	Yes	従業員は、投資のインサイダー情報を使用して 銀行取引、有価証券を交換する
4	13247	Internal Fraud	Loss/Profit	Yes	Employees used insider information on investment banking deal to trade securities.

Rows 1 to 4 of 4

Figure 12. Access Control - Headquarters

Event ID	Summary Description	Event Type	Discovery Date	Estimated Amount	Currency	Status	Issue Threshold Exceeded	Issues	Input Date	Investigator	Creator
13100	Internal Fraud	Loss/Profit	Nov 29, 2010	200,000.00	USD	Fully validated	No		0 Nov 29, 2010	Wendy - Incident Investigation	Victor - Incident Creation

Figure 13. Access Control – U.S. Branch

事件 ID	文意说明	事件类型	发现日期	估计金额	货币	状态	已超出问题阈值	问题	输入日期	调查者	创建者
13120	内部欺诈	损失/收益	2010-11-29	200,000.00	GBP	已完全批准	否		0 2010-11-29	Lil - Incident Investigation	Zhaoliu - Incident Creation

Figure 14. Access Control – China Branch

3) INVESTIGATE INCIDENT

After incident creation, an alert notification e-mail is automatically sent to an incident investigator to alert that an incident is ready for investigation.

1. Alert notification e-mail

Clerks in the U.S. can receive English alert notification e-mail. Likewise, clerks in China can receive Chinese alert notification e-mail.

Furthermore, the e-mail content is based on a template and is also customizable for different countries. So the clerk can configure not only the language of the e-mail but also the content for various countries.

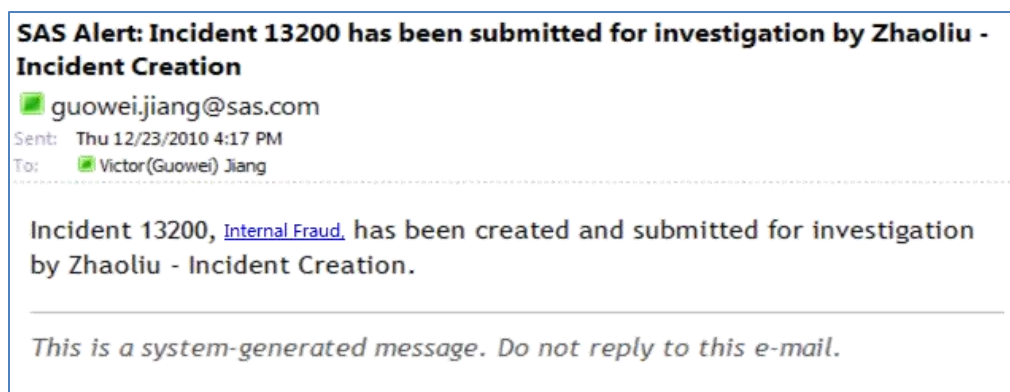


Figure 15. English Alert Notification Mail



Figure 16. Chinese Alert Notification Mail

2. Business line

The incident investigator investigates the whole event and inputs information such as a detailed event description, actual loss amount, and root cause.

The incident investigator will enter the business line where the incident happens in this Web page. In the left graph, a U.S. incident investigator selects the geographic area, and then the relevant five business lines in the U.S. branch are shown. Similarly, in the right graph, the two business lines in the China branch are shown for a Chinese incident investigator. It is reasonable to show business lines within the branch rather than showing all.

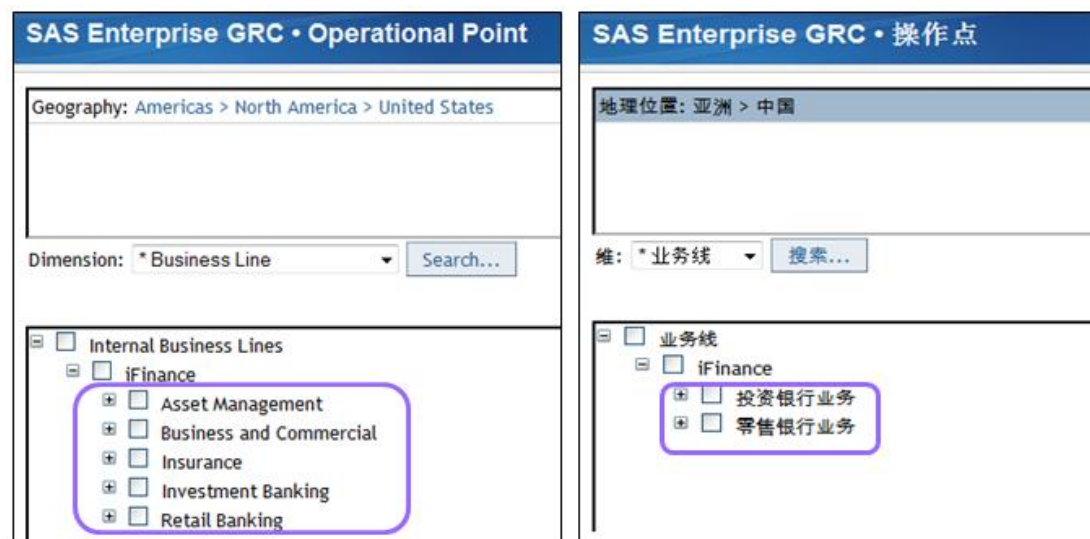


Figure 17. Different Business Lines in U.S. and China

3. Date and number format

The graph above is an English Web page. Below is an Arabic one. They show different date formats. The date format in the U.S. is month/day/year, while it is year/month/day in Saudi Arabia. Similarly, the number format is different as well.

*** Dates and Amounts**

* Discovery Date: 12/3/2010 (mm/dd/yyyy)

Start Date: 12/3/2010 (mm/dd/yyyy)

End Date: 12/3/2010 (mm/dd/yyyy)

* Estimated Amount: 200,000.00 USD

Estimated Amount (EUR): 149,611.01

Maximum Potential Amount: EUR

Maximum Potential Amount (EUR): 0.00

Figure 18. Date and Number Format in U.S.

*** التواريخ والمبالغ**

* تاريخ الاكتشاف: (yyyy / mm / dd) 2010/12/7

تاريخ البداية: (yyyy / mm / dd) 2010/12/7

تاريخ النهاية: (yyyy / mm / dd) 2010/12/7

* المبلغ المقدر: SAR ١٥٠٠٠٠٠,٠٠

المبلغ المقدر (EUR): ٢٦٣٧١٠,٥٢

الحد الأقصى للمبلغ المحتمل: EUR

الحد الأقصى للمبلغ المحتمل (EUR): ٠,٠٠

Figure 19. Date and Number Format in Saudi Arabia

4) VALIDATE INCIDENT

After investigation, an alert notification will be sent to an incident validator. Moreover, the notification will also appear in the task list in the home page. This is the Web page to validate incident.

SAS Enterprise GRC • Event • Internal Fraud

Event

Effects
Recoveries
Allocations
Causes
Failed Controls

Save Apply Validate Return from Validation Cancel

Expand All Sections

Create → Investigate → Validate

* Discovery Operational Point

* Management Organization: iFinance > Investment Banking > Securities
* Geography: Americas > North America > United States

* Event Operational Point

* Risk Event Type: Internal Fraud > Theft and Fraud > Insider trading
* Management Organization: iFinance > Investment Banking > Securities
* Geography: Americas > North America > United States
* Product: Securities
Process Type: (None Selected)
Standard Risk Event Type: Internal Fraud > Theft and Fraud

* Descriptions

Event ID: 13247
* Security Clearance: Available to everyone
* Event Type: Loss/Profit
Overall Classification: None
* Incident Title: Insider Trading
Summary Description: Internal Fraud
* Event Description: Employees used insider information on investment banking deal to trade securities.
Attachments for Event Description: [Add...]
Has Legal Impact?: ☐ Yes ☒ No

Figure 20. Validate Incident

The result of the investigation will be validated. If the result is not approved, it can be returned for re-investigation.

Validation is based on internal control rules. Different branches might have different internal control rules. The rules define who should validate it and define the number of validation stages.

For example, in the China branch, an incident is validated by local clerks if the loss amount is less than 10,000. Otherwise, it is validated by HQ. In the U.S. branch, an incident is validated only by local clerks no matter what the amount is.

The difference of internal control rules is implemented via customizable workflow in SAS Enterprise GRC.

Operational Point (China) Edit | Clear | Favorites

Risk Event Type: (None Selected)
Management Organization: iFinance > Investment Banking > Securities
Geography: Asia > China
Product: (None Selected)
Process Type: (None Selected)

Current Validation Stages

Validation Stages (2) Edit Validation Stages...								
Stage	Name	Validation Stage ID	Source System	Applies to	Stage Type	Minimum Threshold	Maximum Threshold	Validators
1	Validation Stage for Securities Department <=10000	10080	Monitor	Near Misses, Gains, Losses	Management Validation		10,000.00	张三 - Incident Management Validation
2	Validation Stage for Securities Department >10000	10084	Monitor	Near Misses, Gains, Losses	Management Validation	10,001.00		Robert - Incident Management Validation

Figure 21. Workflow in China

Operational Point: (US) Edit | Clear | Favorites

Risk Event Type: (None Selected)

Management Organization: iFinance > Investment Banking > Securities

Geography: Americas > North America > United States

Product: (None Selected)

Process Type: (None Selected)

Current Validation Stages

Validation Stages (1) Edit Validation Stages...								
Stage	Name	Validation Stage ID	Source System	Applies to	Stage Type	Minimum Threshold	Maximum Threshold	Validators
1	Validation Stage for Securities Department	10060	Monitor	Near Misses, Gains, Losses	Management Validation			Robert - Incident Management Validation

Figure 22. Workflow in the U.S.

5) VIEW REPORT

Clerks in the U.S, China, Japan, and Saudi Arabia have finished their workflows. The reports, including data in all branches, can be generated at this time.

In the left graph, various languages are displayed in one report. That is useful when different branches use different languages to enter data.

In the right graph, the title and column title are Chinese whereas they are English in the left graph. That means the language of the title and column title can also be changed and would be useful if the headquarters is located in another country and managers want to view report in their native language.

Financial Effects for iFinance > Investment Banking > Securities and						
Effect ID	Title	Booked Loss/Gain Amount				
11540	SEC fine	149,611.01				
11600	SEC 罚款	22,116.31				
11640	SEC 罚金	1,253.49				
11643	الجلس الأخرى لتتبع غرامة	39,168.07				
		212,148.88				

Financial Effects Matrix						
Risk Event Type	Management Organization					
	iFinance > Investment Banking > Securities					
	Count	Sum	Min	Max	Mean	Std Dev
.	4	212,148.88	1,253.49	149,611.01	53,037.22	66,223.13

Values are Total Loss Amount in EUR

以下对象的财务影响: iFinance > 投资银行 > 证券 和						
影响 ID	标题	帐面损失/收益金额				
11540	SEC fine	149,611.01				
11600	SEC 罚款	22,116.31				
11640	SEC 罚金	1,253.49				
11643	الجلس الأخرى لتتبع غرامة	39,168.07				
		212,148.88				

财务影响矩阵						
风险事件类型	管理组织					
	iFinance > 投资银行 > 证券					
	计数	总和	最小值	最大值	均值	标准差
.	4	212,148.88	1,253.49	149,611.01	53,037.22	66,223.13

值为按以下货币计总损失金额: EUR

Figure 23. Multilingual Support in Report

The amount is reported in the base currency (the euro). As mentioned above, exchange rates are used to convert from four currencies to the euro. Then the loss amounts from four branches are collected and aggregated.

Branch	Loss Amount	Loss Amount (Euro)
U.S.	200,000 Dollars	149,611.01
China	200,000 Chinese Yuan	22,116.31
Japan	200,000 Japanese Yen	1,253.49
Saudi Arabia	200,000 Riyal	39,168.07
Total		212,148.88

Managers in headquarters are able to view the report, including data from all over the Enterprise. Moreover, managers in each branch are also able to view the report, including data in their own branch. The report at the top left corner is for the U.S branch. Only data within the U.S. branch appear. The reports for China, Japan, and Saudi Arabia branches are also listed.

Effect ID	Title	Booked Loss/Gain Amount
11540	SEC fine	149,611.01
		149,611.01

Financial Effects Matrix

		Geography					
		iFinance > Investment Banking > Securities					
		Count	Sum	Min	Max	Mean	Std Dev
Risk Event Type							
	1	1	149,611.01	149,611.01	149,611.01	149,611.01	

影响 ID	标题	帐面损失/收益金额
11600	SEC 罚款	22,116.31
		22,116.31

财务影响矩阵

		管理组织					
		iFinance > Investment Banking > Securities					
		计数	总和	最小值	最大值	均值	标准差
风险事件类型							
	1	1	22,116.31	22,116.31	22,116.31	22,116.31	

効果 ID	タイトル	損失額/利益額 (記帳)
11640	SECの罰金	1,253.49
		1,253.49

効果マトリックス金融

		部署					
		iFinance > Investment Banking > Securities					
		件数	合計	最小	最大	平均	標準偏差
リスクイベントの種類							
	1	1	1,253.49	1,253.49	1,253.49	1,253.49	

معرف الأثر	البيان	الخسارة المسجلة بمبلغ الربح
11643	المجلس الأعلى للتنظيم غرامة	39,168.07
		39,168.07

سجل الآثار المالية

		المؤسسة الإدارية					
		iFinance > Investment Banking > Securities					
		الاحصاء	معدل	أقصى	أدنى	مجموع	حساب
نوع حدث المخاطرة							
	1	1	39,168.07	39,168.07	39,168.07	39,168.07	

Figure 24. Reports for Different Branches

Above is the scenario to process the incident. It shows the power of SAS Enterprise GRC to manage incidents in a distributed enterprise. Moreover, there are many good supports in other processes. For example, questionnaire-based assessment can be performed to collect information about risks within the organization. The questionnaire is made and sent to assessors. Assessors in different countries are able to view questions and choices in their native languages. If clerks use a language without relevant translation prepared, the default language specified by the administrator will be used.

(Group-1) 风险评估问题组
这个问题组获取关于风险可能性和影响的评估。

1. (Q-1.1) 提供您对以上风险可能性的评估。 [帮助]

0% 到 15%	15% 到 50%	50% 到 85%	85% 到 100%
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

理由:

2. (Q-1.2) 提供您对以上风险影响的评估。 [帮助]

小于 250k	在 250k 和 1m 之间	在 1m 和 5m 之间	大于 5m
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

理由:

(Group-2) 风险偏好问题组
这个问题组获取风险偏好。

3. (Q-2.1) 输入您对以上风险风险偏好的评估。 [帮助]

(介于 10,000.00 和 100,000,000.00 之间)

理由:

Figure 25. Chinese Questionnaire

(Group-1) Risk Assessment Group
This question group captures the likelihood and impact assessment of risks.

1. (Q-1.1) Provide your assessment of likelihood for the above risk. [Help]

0% to 15%	15% to 50%	50% to 85%	85% to 100%
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Justification:

2. (Q-1.2) Provide your assessment of impact for the above risk. [Help]

Less than 250k	Between 250k to 1m	Between 1m to 5m	Above 5m
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Justification:

(Group-2) Risk Appetite Group
This question group captures the risk appetite.

3. (Q-2.1) Enter your assessment of risk appetite for the above risk. [Help]

(between 10,000.00 and 100,000,000.00)

Justification:

Figure 26. English Questionnaire

CONCLUSION

SAS Enterprise GRC supports various languages in the graphical user interface, user data, alert notification e-mail, and reports.

It supports right-to-left rendering, various date, time, number, and currency formats, suitable security mechanisms, and customizable workflows for a distributed enterprise.

- Multiple languages
 - Graphical user interface and user data
 - Alert notification e-mail
 - Reports
- Right-to-left rendering support
- Date, time, and number formats
- Currency
- Customizable workflow

- Security
- Diversity of business structure

In conclusion, SAS Enterprise GRC is a perfect product to manage nonfinancial risks in a distributed enterprise.

The SAS Legal Department is currently implementing SAS Enterprise GRC to manage compliance processes across a number of roles and departments at SAS. Other SAS departments – including SAS Finance and SAS Ergonomics – are beginning SAS Enterprise GRC implementations to provide standard out-of-the-box workflow, and repeatable, reportable processes for conducting audits and providing employees with ergonomic workstations. SAS Enterprise GRC has been implemented for more than 80 customers, from financial services, energy and utilities, manufacturing, and retail to public sector, and from local to distributed enterprises.

REFERENCES

The following references or sources can be used for additional information and research activities:

- “Governance, risk management, and compliance.” Wikipedia. Available at http://en.wikipedia.org/wiki/Governance,_risk_management,_and_compliance. Accessed on February 15, 2011.
- SAS Enterprise GRC 4.3: User Guide. Available at http://support.sas.com/documentation/onlinedoc/securedoc/index_egrc.html
- SAS Enterprise GRC 4.3: Administrator’s Guide. Available at http://support.sas.com/documentation/onlinedoc/securedoc/index_egrc.html

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