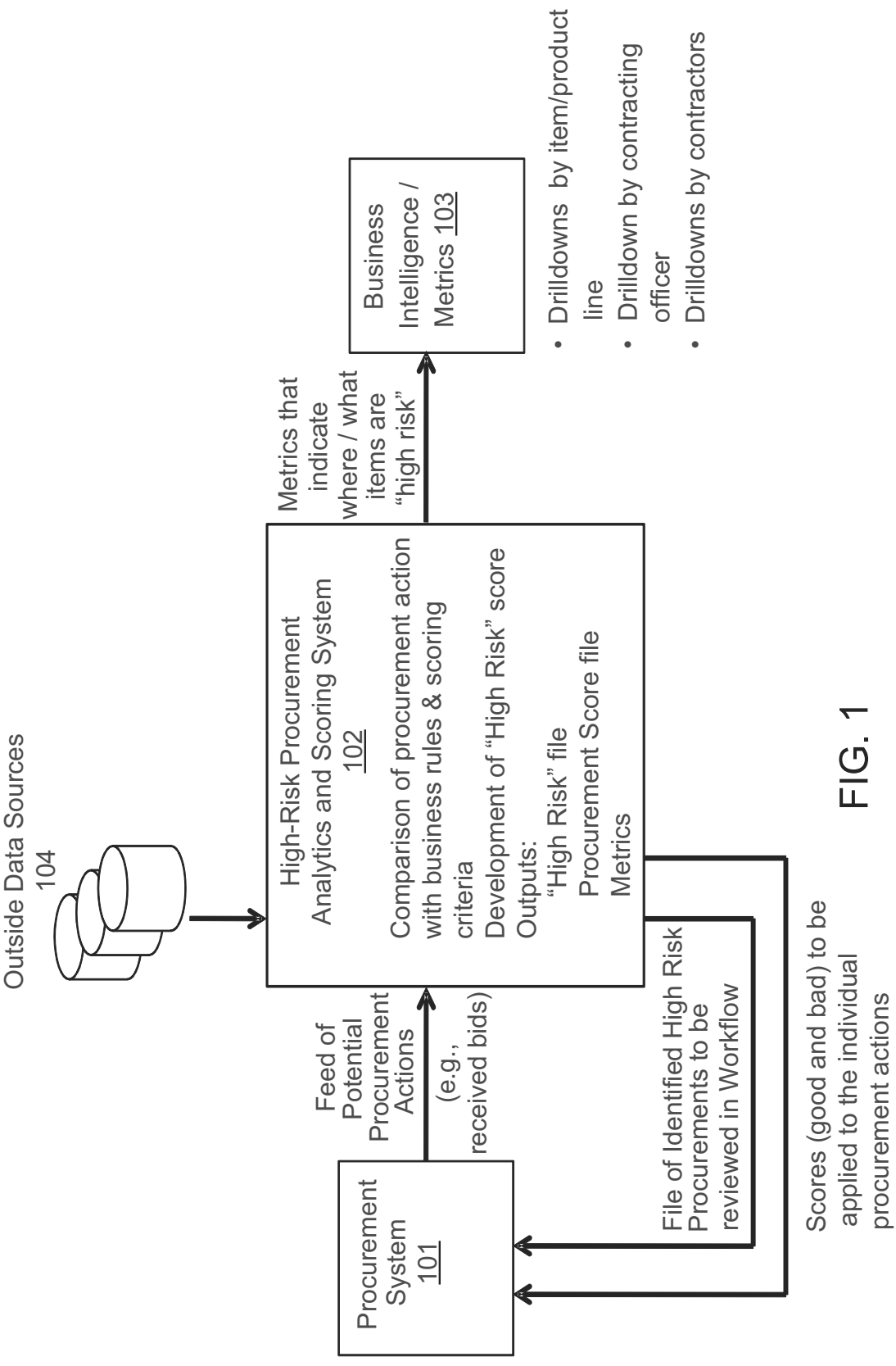

100
Outside Data Sources
104
High-Risk Procurement Analytics and Scoring System
102
Comparison of procurement action with business rules & scoring criteria
Development of "High Risk" score
Outputs:
"High Risk" file
Procurement Score file
Metrics
Metrics that indicate where / what items are "high risk"
Business Intelligence / Metrics 103
• Drilldowns by item/product line
• Drilldown by contracting officer
• Drilldowns by contractors
Procurement System 101
Feed of Potential Procurement Actions
(e.g., received bids)
File of Identified High Risk Procurements to be reviewed in Workflow
Scores (good and bad) to be applied to the individual procurement actions

FIG. 1

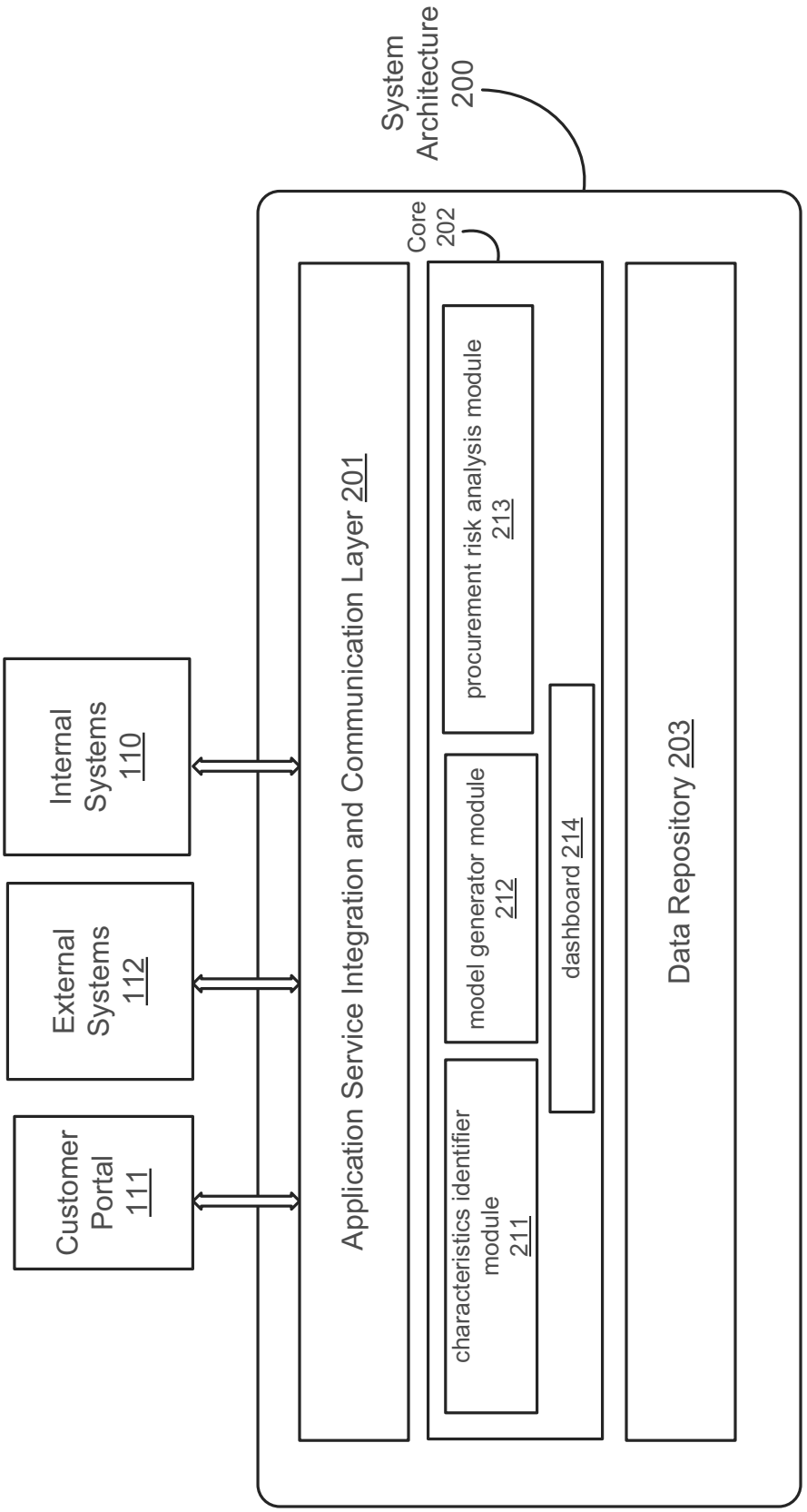

System Architecture 200
Core 202
Application Service Integration and Communication Layer 201
procurement risk analysis module 213
model generator module 212
dashboard 214
characteristics identifier module 211
Data Repository 203
Internal Systems 110
External Systems 112
Customer Portal 111

FIG. 2

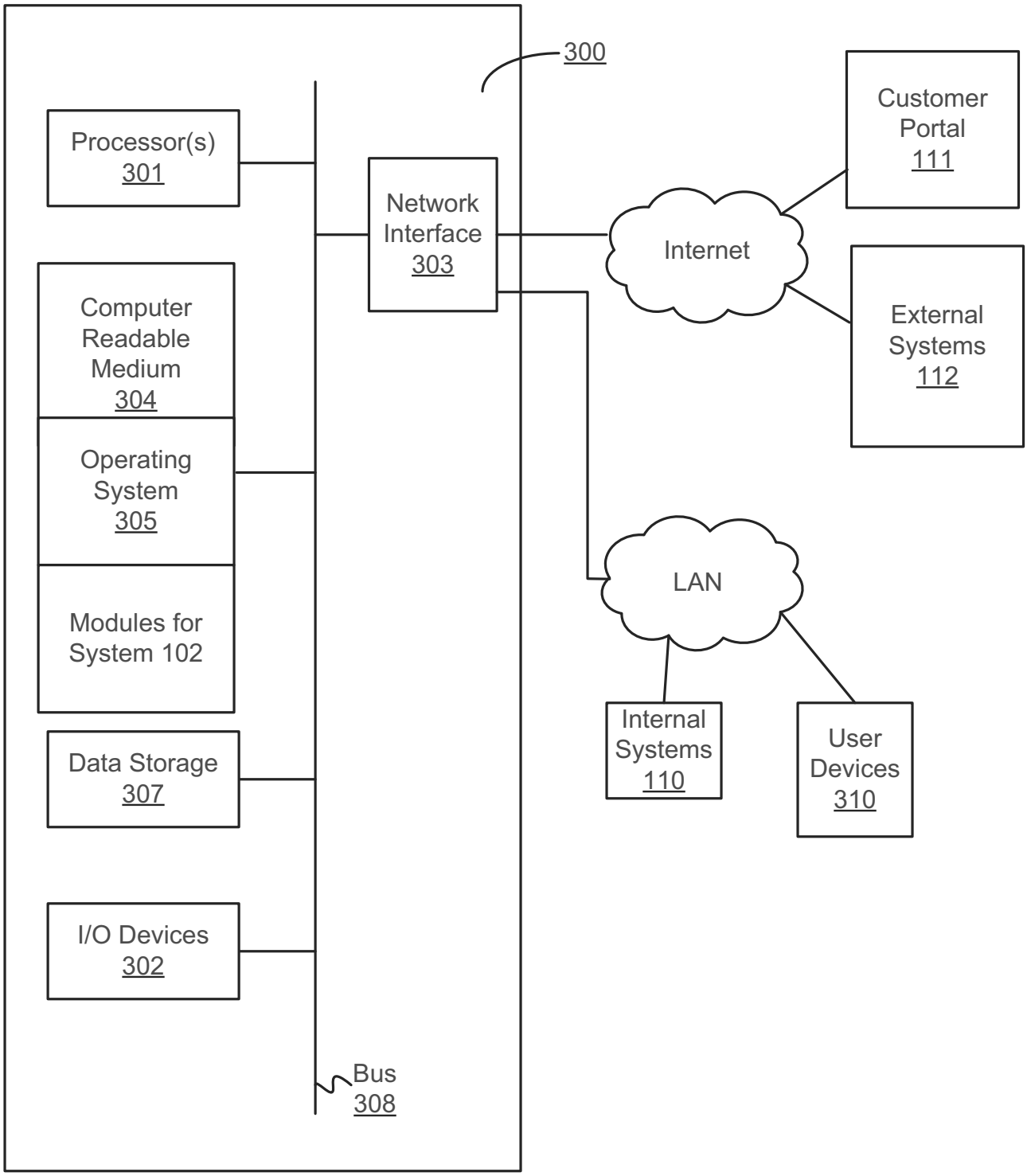

300
Processor(s)
301
Network
Interface
303
Customer
Portal
111
Internet
External
Systems
112
Computer
Readable
Medium
304
Operating
System
305
Modules for
System 102
LAN
Internal
Systems
110
User
Devices
310
Data Storage
307
I/O Devices
302
Bus
308

FIG. 3

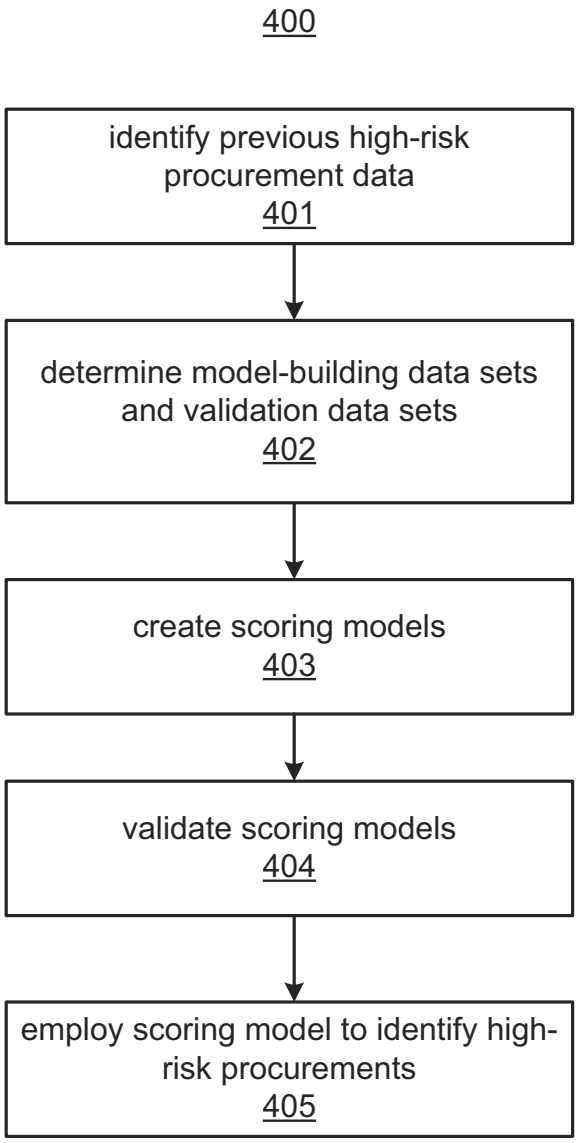

400
identify previous high-risk procurement data
401
determine model-building data sets and validation data sets
402
create scoring models
403
validate scoring models
404
employ scoring model to identify high-risk procurements
405

FIG. 4

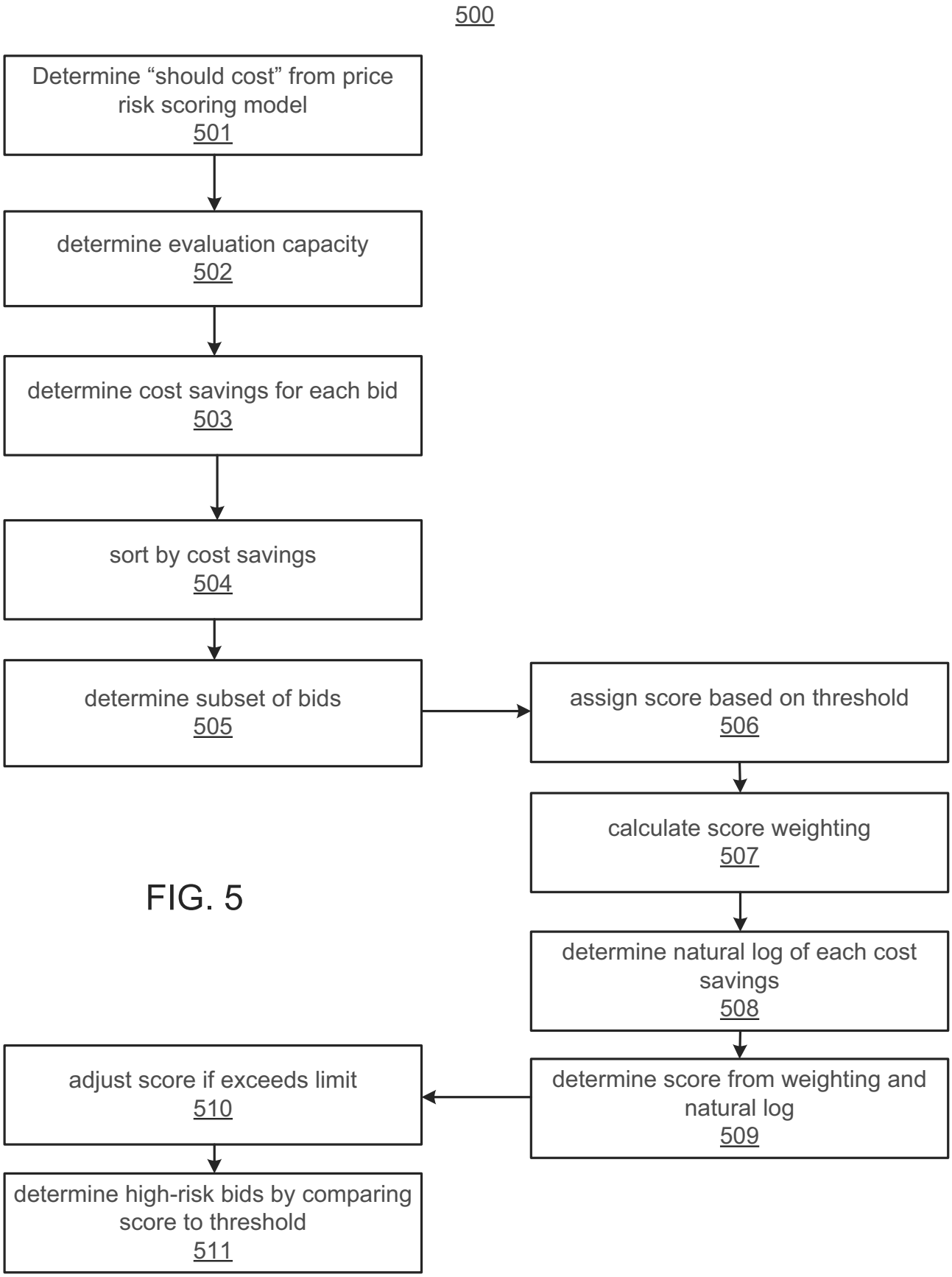

500
Determine “should cost” from price risk scoring model
501
determine evaluation capacity
502
determine cost savings for each bid
503
sort by cost savings
504
determine subset of bids
505
assign score based on threshold
506
calculate score weighting
507
determine natural log of each cost savings
508
determine score from weighting and natural log
509
adjust score if exceeds limit
510
determine high-risk bids by comparing score to threshold
511

FIG. 5

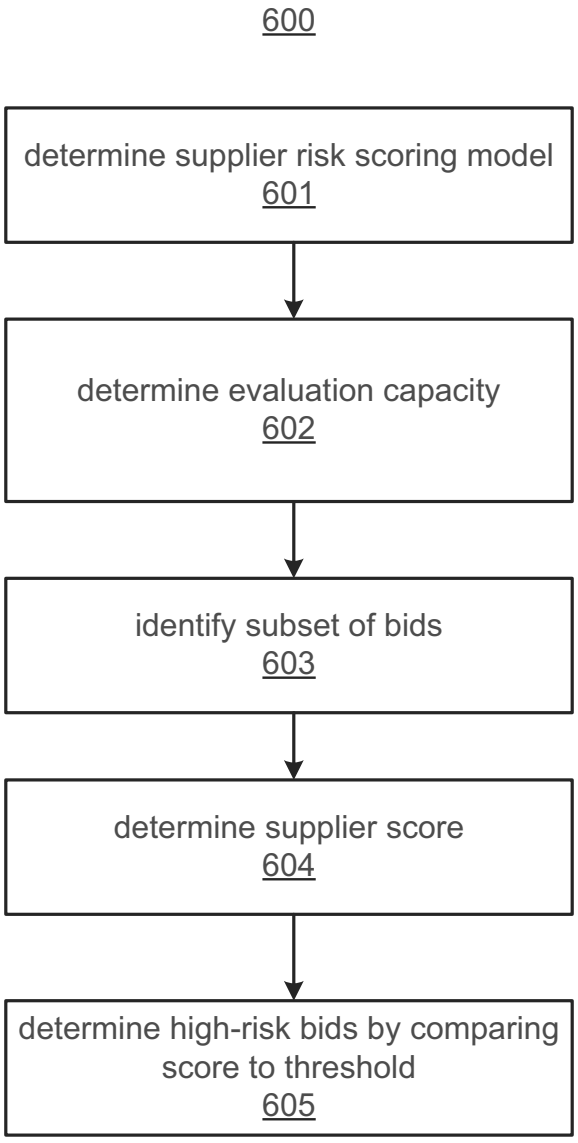

600
determine supplier risk scoring model
601
determine evaluation capacity
602
identify subset of bids
603
determine supplier score
604
determine high-risk bids by comparing score to threshold
605

FIG. 6

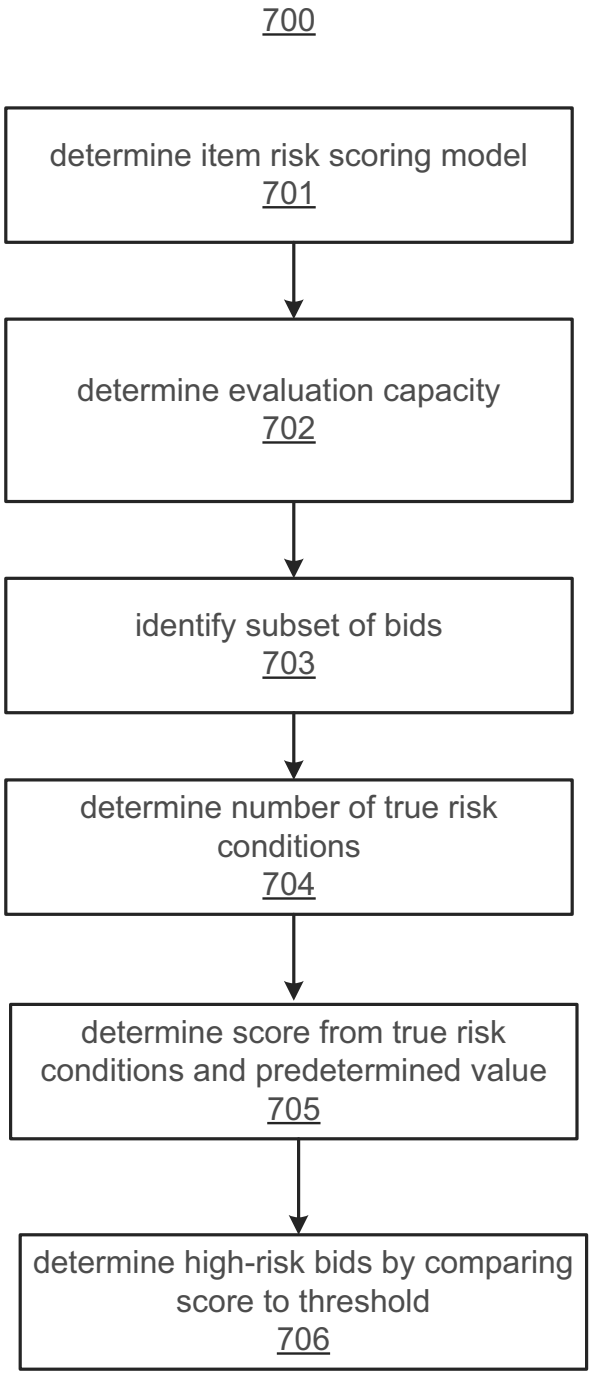

700
determine item risk scoring model
701
determine evaluation capacity
702
identify subset of bids
703
determine number of true risk conditions
704
determine score from true risk conditions and predetermined value
705
determine high-risk bids by comparing score to threshold
706

FIG. 7

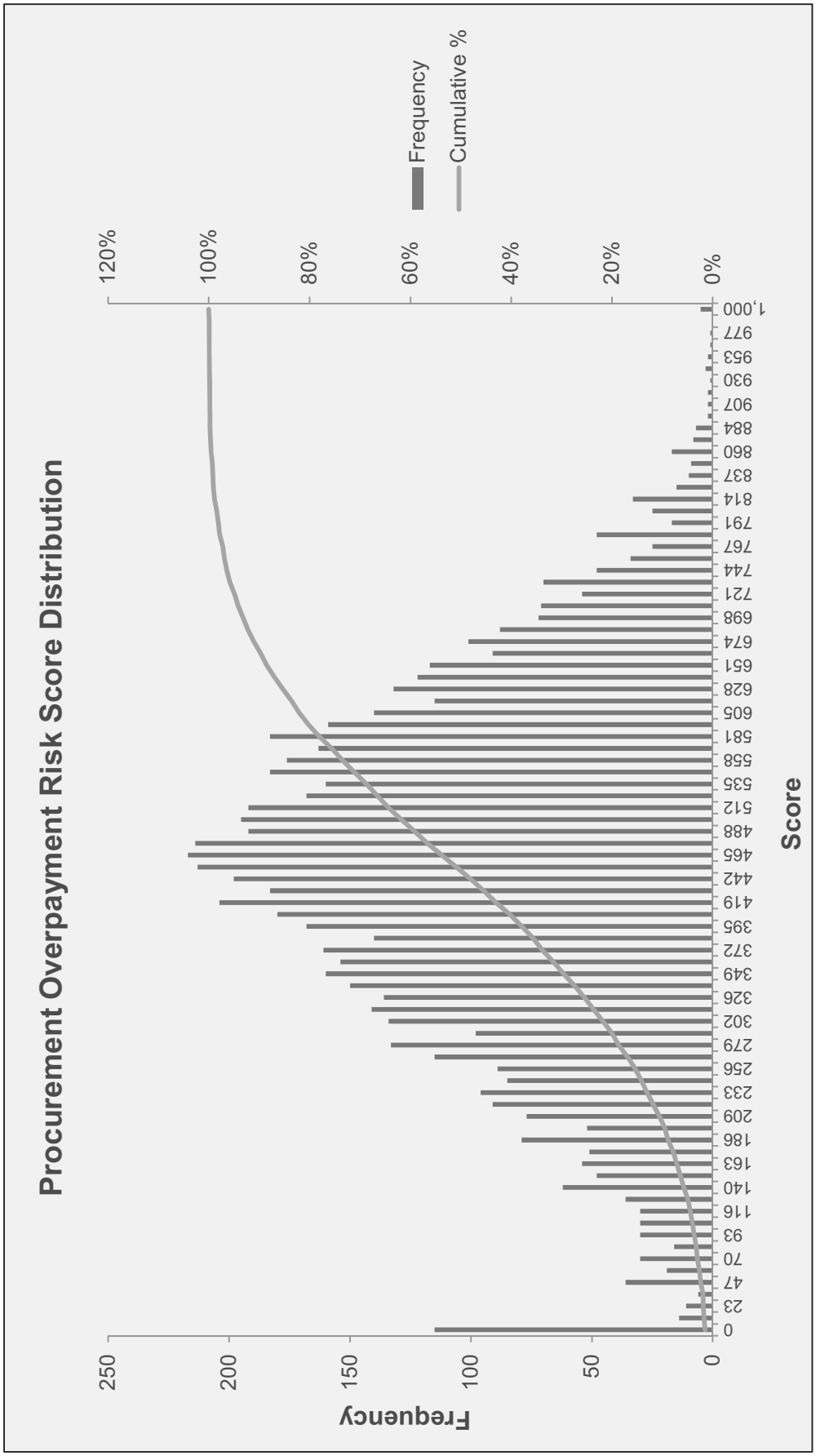

Procurement Overpayment Risk Score Distribution
Frequency
Cumulative %
120%
100%
80%
60%
40%
20%
0%
250
200
150
100
50
0
Frequency
0
23
47
70
93
116
140
163
186
209
233
256
279
302
326
349
372
395
419
442
465
488
512
535
558
581
605
628
651
674
698
721
744
767
791
814
837
860
884
907
930
953
977
1,000
Score

FIG. 8A

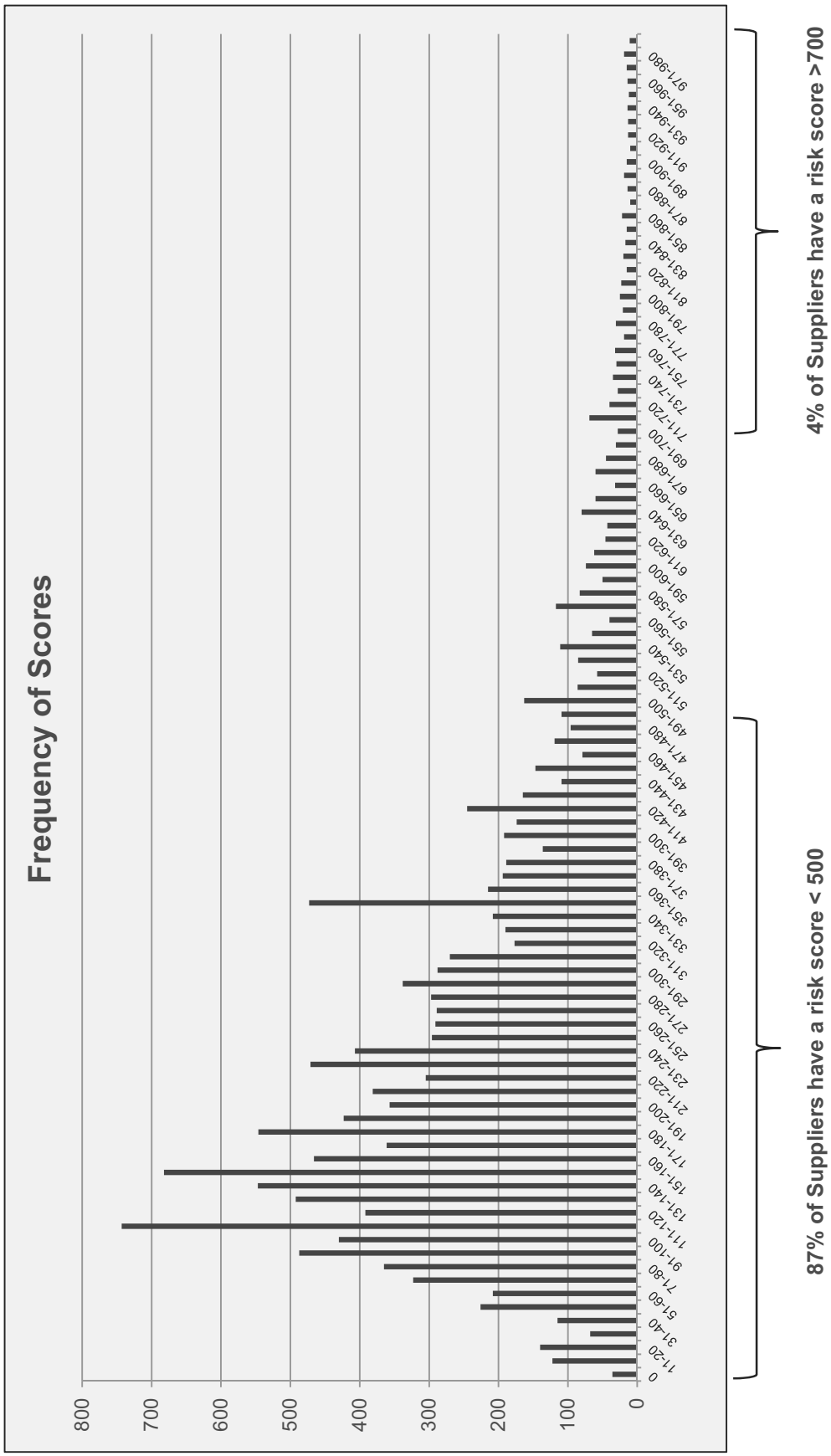

SUPPLIER RISK
Frequency of Scores
800
700
600
500
400
300
200
100
0
87% of Suppliers have a risk score < 500
4% of Suppliers have a risk score >700

FIG. 8B

ITEM RISK

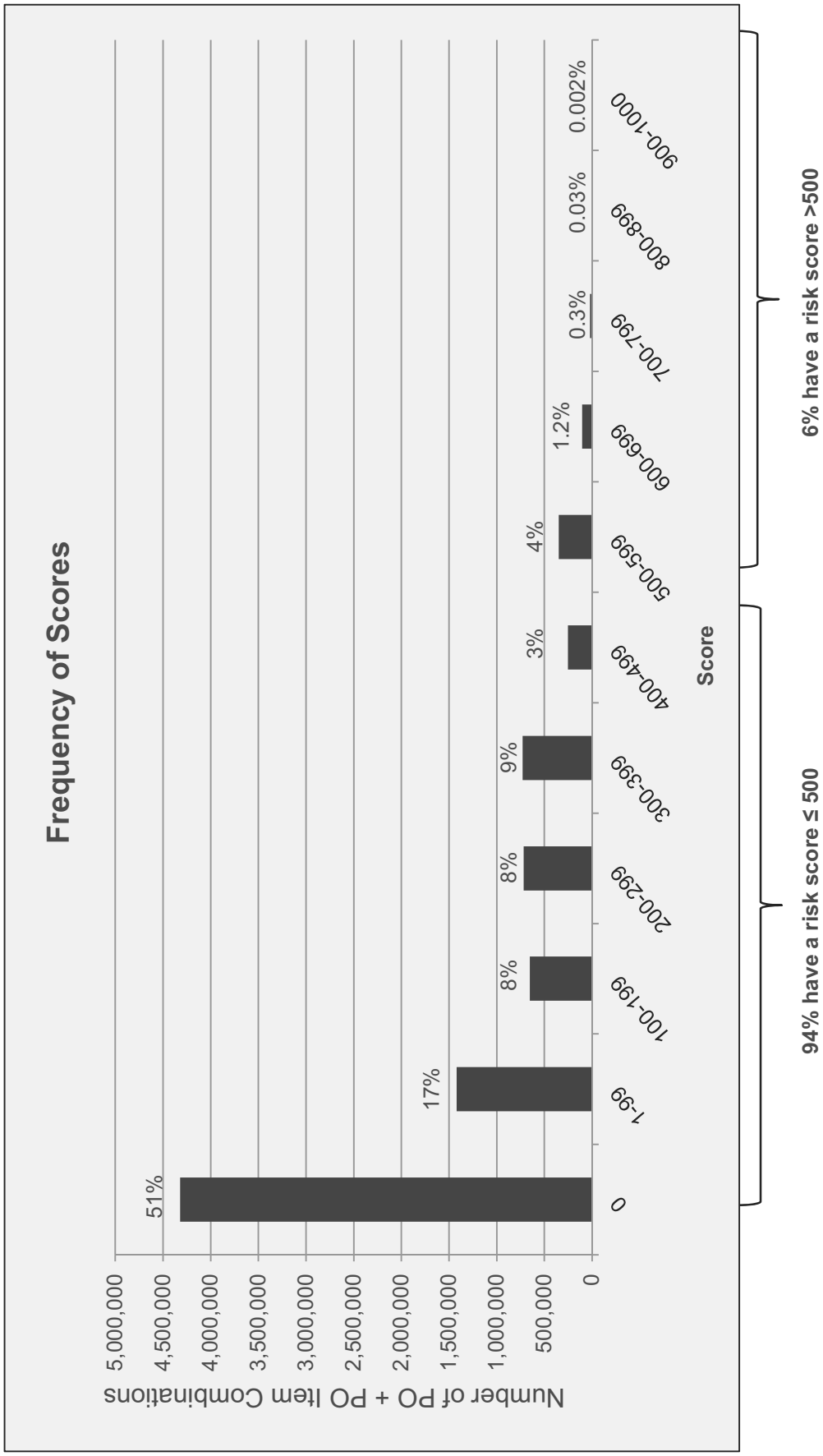


FIG. 8C

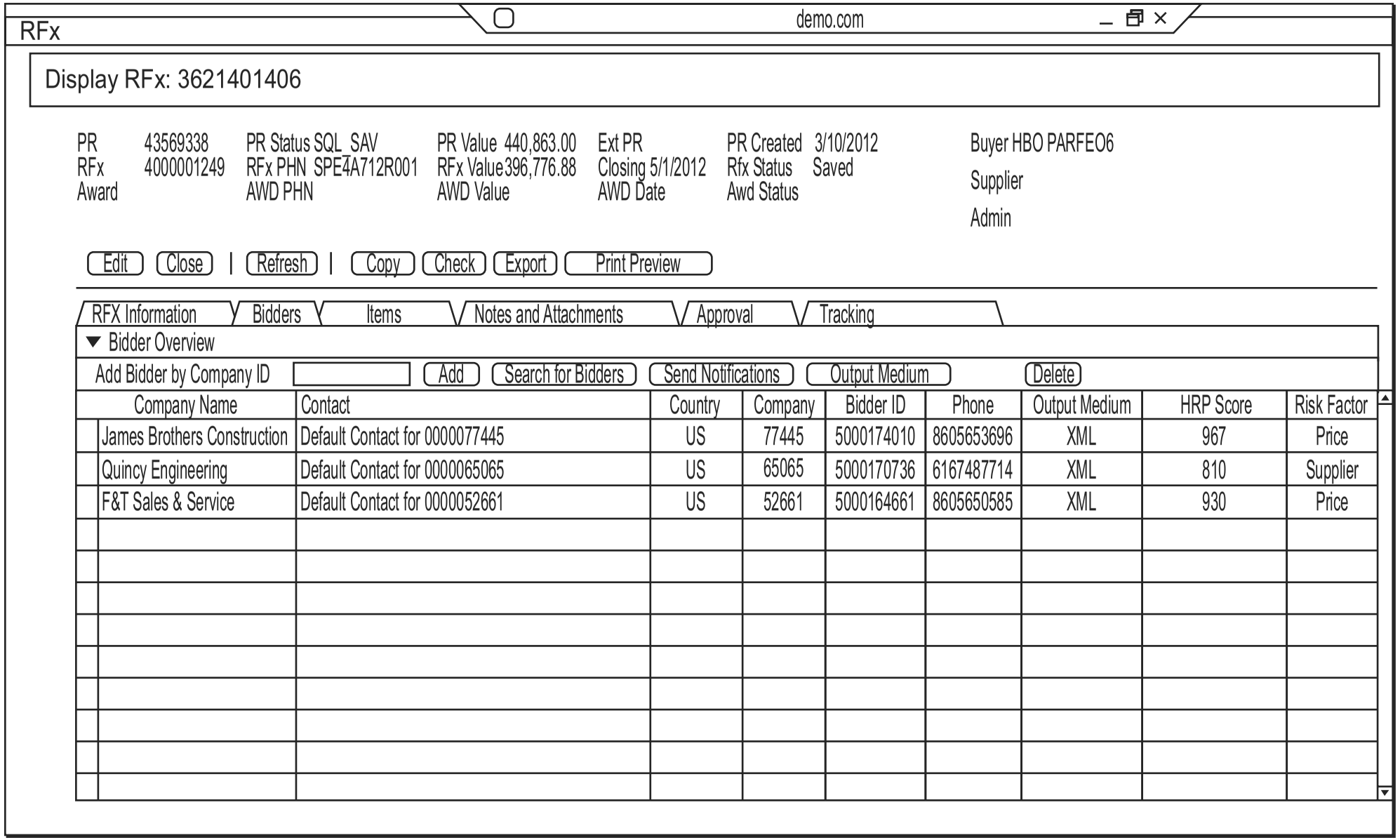

RFx
demo.com
Display RFx: 3621401406
PR 43569338 PR Status SQL SAV PR Value 440,863.00 Ext PR PR Created 3/10/2012 Buyer HBO PARFEO6
RFx 4000001249 RFx PHN SPE4A712R001 RFx Value 396,776.88 Closing 5/1/2012 Rfx Status Saved Supplier
Award AWD PHN AWD Value AWD Date Awd Status Admin
Edit Close | Refresh | Copy Check Export Print Preview
RFX Information Bidders Items Notes and Attachments Approval Tracking
Bidder Overview
Add Bidder by Company ID Add Search for Bidders Send Notifications Output Medium Delete
Company Name | Contact | Country | Company | Bidder ID | Phone | Output Medium | HRP Score | Risk Factor
James Brothers Construction | Default Contact for 0000077445 | US | 77445 | 5000174010 | 8605653696 | XML | 967 | Price
Quincy Engineering | Default Contact for 0000065065 | US | 65065 | 5000170736 | 6167487714 | XML | 810 | Supplier
F&T Sales & Service | Default Contact for 0000052661 | US | 52661 | 5000164661 | 8605650585 | XML | 930 | Price

FIG. 9

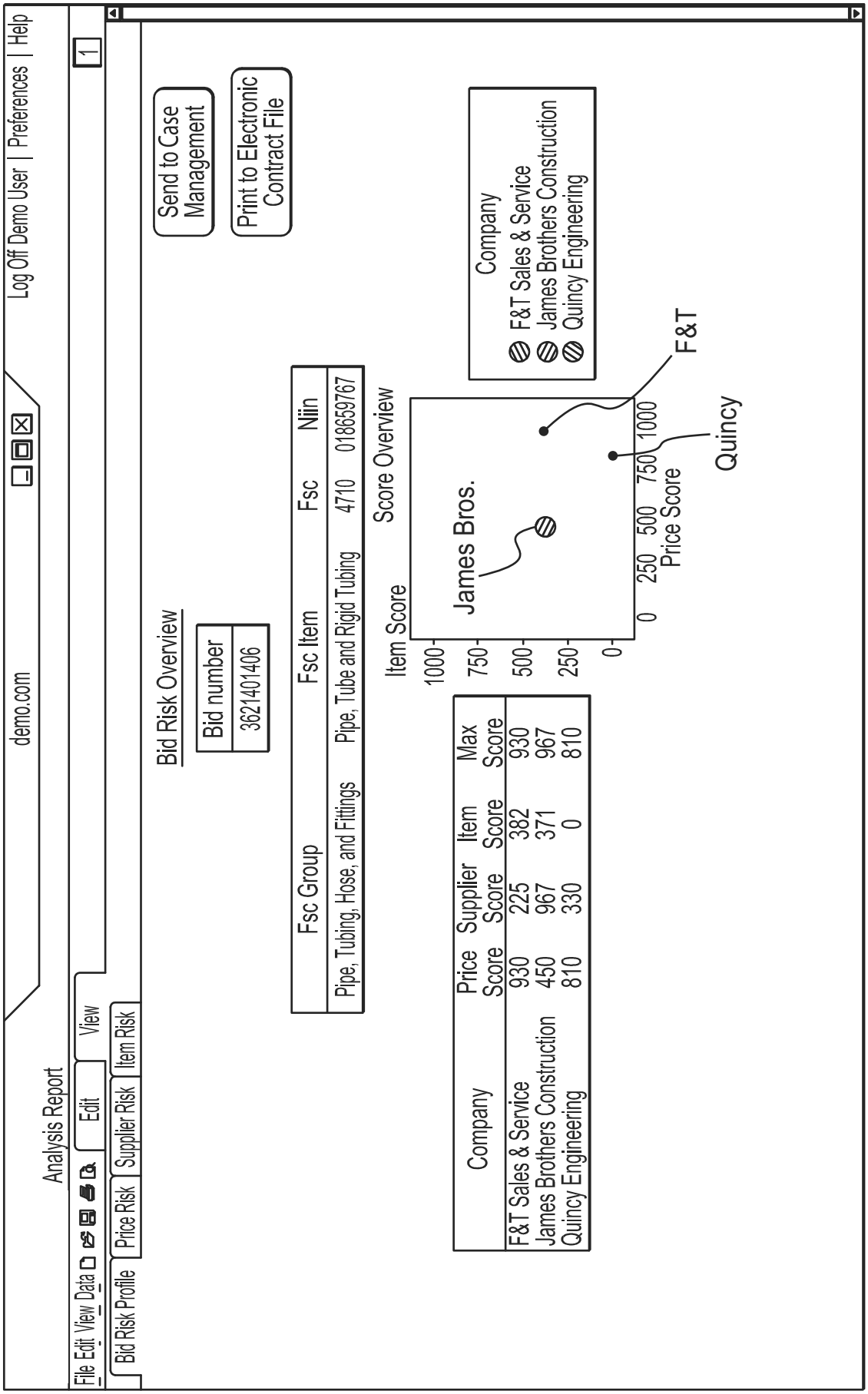

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Analysis Report
File Edit View Data
Edit
View
Bid Risk Profile
Price Risk
Supplier Risk
Item Risk
Send to Case Management
Print to Electronic Contract File
Bid Risk Overview
Bid number
3621401406
Fsc Group
Fsc Item
Fsc
Niin
Pipe, Tubing, Hose, and Fittings
Pipe, Tube and Rigid Tubing
4710
018659767
Score Overview
Item Score
1000
750
500
250
0
James Bros.
0
250
500
750
1000
Price Score
F&T
Quincy
Company
F&T Sales & Service
James Brothers Construction
Quincy Engineering
Company
Price Score
Supplier Score
Item Score
Max Score
F&T Sales & Service
930
225
382
930
James Brothers Construction
450
967
371
967
Quincy Engineering
810
330
0
810

FIG. 10

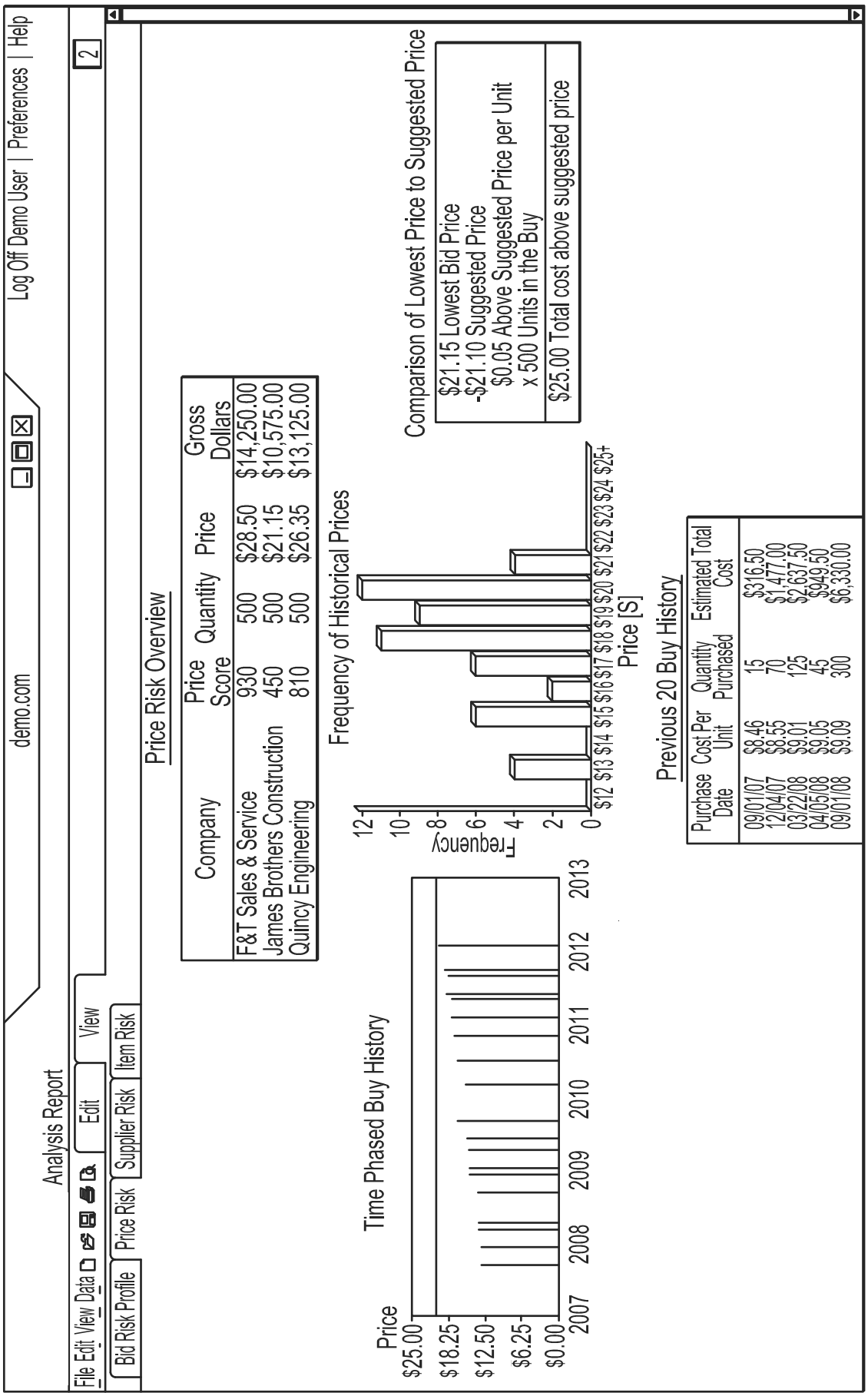

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Analysis Report
File Edit View Data
Edit
View
Bid Risk Profile
Price Risk
Supplier Risk
Item Risk
Price Risk Overview
Company
Price Score
Quantity
Price
Gross Dollars
F&T Sales & Service 930 500 $28.50 $14,250.00
James Brothers Construction 450 500 $21.15 $10,575.00
Quincy Engineering 810 500 $26.35 $13,125.00
Frequency of Historical Prices
Frequency
Price [$]
Comparison of Lowest Price to Suggested Price
$21.15 Lowest Bid Price
-$21.10 Suggested Price
$0.05 Above Suggested Price per Unit
x 500 Units in the Buy
$25.00 Total cost above suggested price
Time Phased Buy History
Price
Previous 20 Buy History
Purchase Date
Cost Per Unit
Quantity Purchased
Estimated Total Cost
09/01/07 $8.46 15 $316.50
12/04/07 $8.55 70 $1,477.00
03/22/08 $9.01 125 $2,637.50
04/05/08 $9.05 45 $949.50
09/01/08 $9.09 300 $6,330.00

FIG. 11a

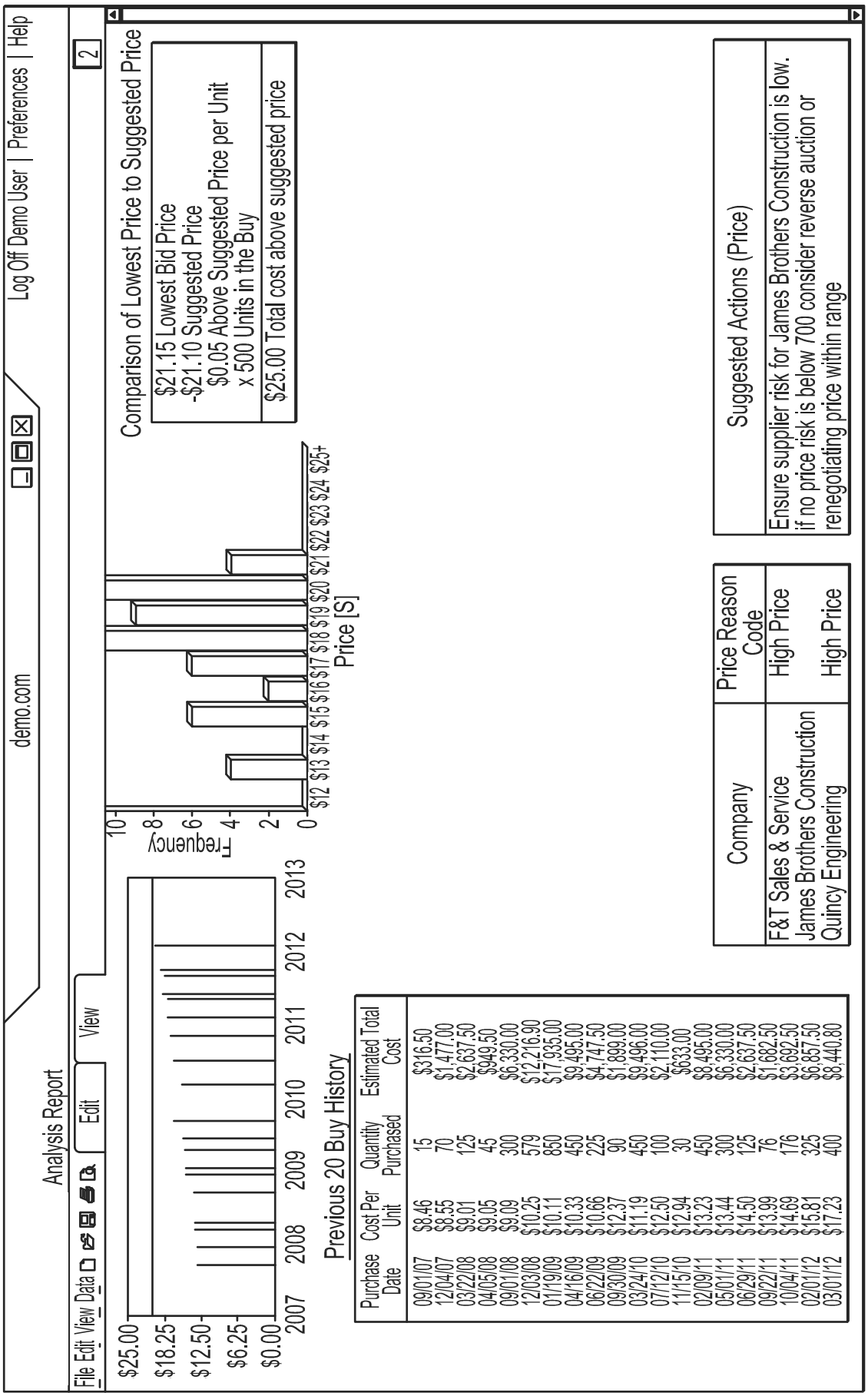

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Analysis Report
Edit
View
2
Comparison of Lowest Price to Suggested Price
$21.15 Lowest Bid Price
-$21.10 Suggested Price
$0.05 Above Suggested Price per Unit
x 500 Units in the Buy
$25.00 Total cost above suggested price
Frequency
Price [$]
Previous 20 Buy History
Purchase Date
Cost Per Unit
Quantity Purchased
Estimated Total Cost
09/01/07 $8.46 15 $316.50
12/04/07 $8.55 70 $1,477.00
03/22/08 $9.01 125 $2,637.50
04/05/08 $9.05 45 $949.50
09/01/08 $9.09 300 $6,330.00
12/03/08 $10.25 579 $12,216.90
01/19/09 $10.11 850 $17,935.00
04/16/09 $10.33 450 $9,495.00
06/22/09 $10.66 225 $4,747.50
09/30/09 $12.37 90 $1,899.00
03/24/10 $11.19 450 $9,496.00
07/12/10 $12.50 100 $2,110.00
11/15/10 $12.94 30 $633.00
02/09/11 $13.23 450 $8,495.00
05/01/11 $13.44 300 $6,330.00
06/29/11 $14.50 125 $2,637.50
09/22/11 $13.99 76 $1,682.50
10/04/11 $14.69 176 $3,692.50
02/01/12 $15.81 325 $6,857.50
03/01/12 $17.23 400 $8,440.80
Company
Price Reason Code
F&T Sales & Service
James Brothers Construction
Quincy Engineering
High Price
High Price
Suggested Actions (Price)
Ensure supplier risk for James Brothers Construction is low. if no price risk is below 700 consider reverse auction or renegotiating price within range

FIG. 11b

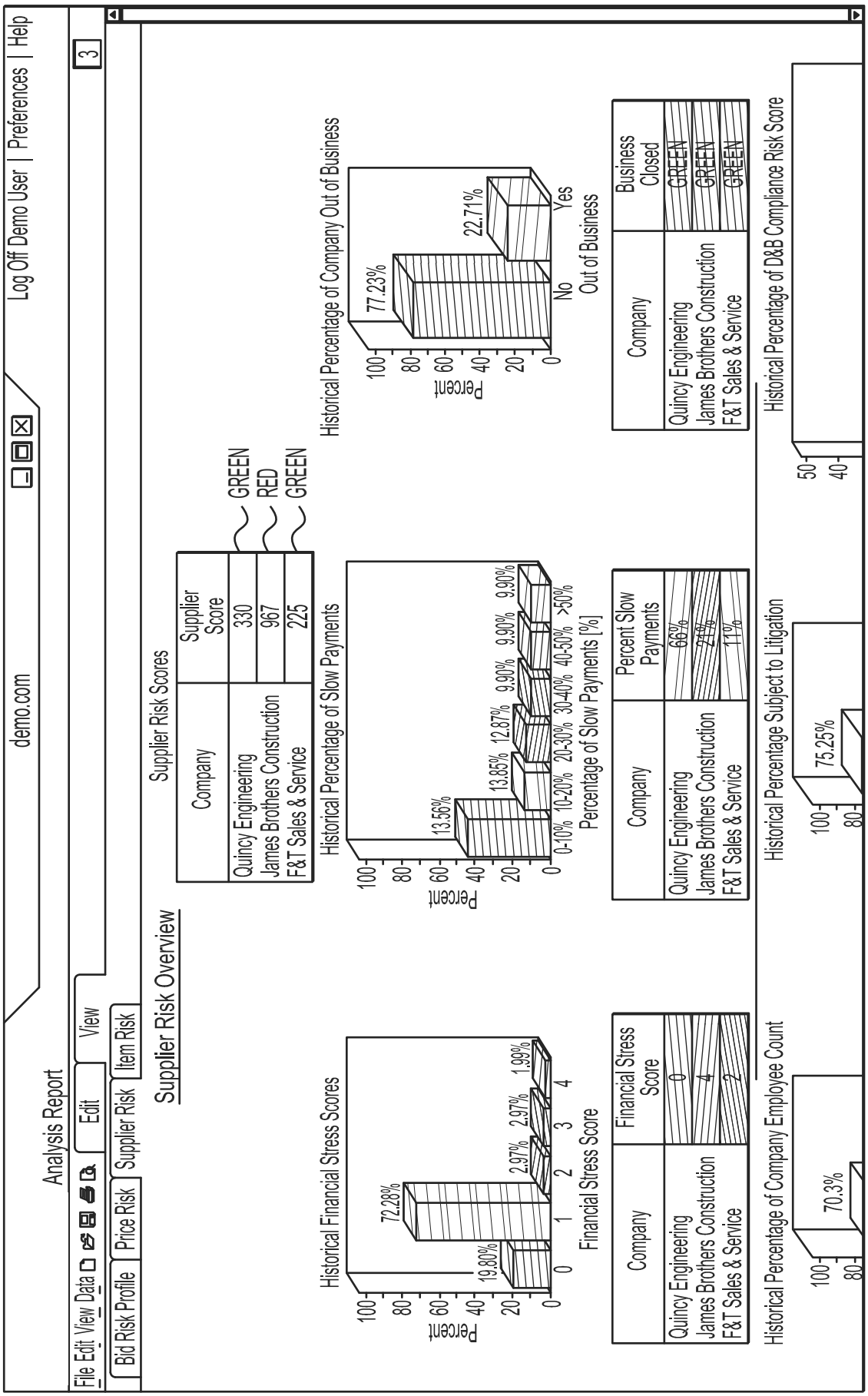

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Analysis Report
File Edit View Data
Edit
View
3
Bid Risk Profile
Price Risk
Supplier Risk
Item Risk
Supplier Risk Overview
Supplier Risk Scores
Company
Supplier Score
Quincy Engineering
James Brothers Construction
F&T Sales & Service
330
967
225
GREEN
RED
GREEN
Historical Percentage of Company Out of Business
Percent
77.23%
22.71%
No
Yes
Out of Business
Company
Business Closed
Quincy Engineering
James Brothers Construction
F&T Sales & Service
GREEN
GREEN
GREEN
Historical Percentage of Slow Payments
Percent
13.56%
13.85%
12.87%
9.90%
9.90%
9.90%
9.90%
0-10%
10-20%
20-30%
30-40%
40-50%
>50%
Percentage of Slow Payments [%]
Company
Percent Slow Payments
Quincy Engineering
James Brothers Construction
F&T Sales & Service
66%
21%
11%
Historical Financial Stress Scores
Percent
19.80%
72.28%
2.97%
2.97%
1.99%
Financial Stress Score
Company
Financial Stress Score
Quincy Engineering
James Brothers Construction
F&T Sales & Service
0
4
2
Historical Percentage Subject to Litigation
75.25%
Historical Percentage of D&B Compliance Risk Score
Historical Percentage of Company Employee Count
70.3%

FIG. 12a

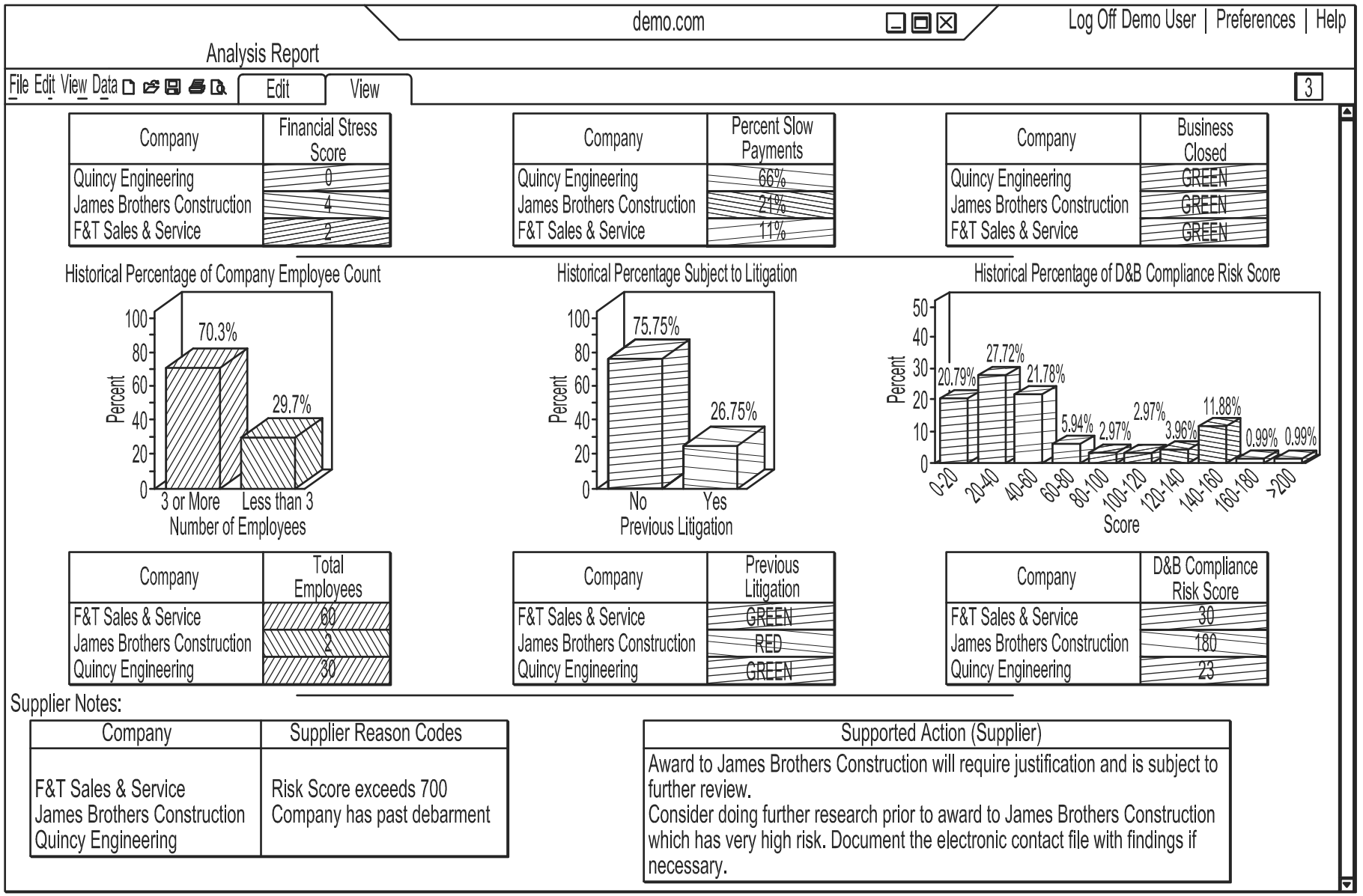

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Analysis Report
File Edit View Data
Edit
View
3
Company
Financial Stress Score
Quincy Engineering
James Brothers Construction
F&T Sales & Service
0
4
2
Company
Percent Slow Payments
Quincy Engineering
James Brothers Construction
F&T Sales & Service
66%
21%
11%
Company
Business Closed
Quincy Engineering
James Brothers Construction
F&T Sales & Service
GREEN
GREEN
GREEN
Historical Percentage of Company Employee Count
Percent
70.3%
29.7%
3 or More
Less than 3
Number of Employees
Historical Percentage Subject to Litigation
Percent
75.75%
26.75%
No
Yes
Previous Litigation
Historical Percentage of D&B Compliance Risk Score
Percent
20.79%
27.72%
21.78%
5.94%
2.97%
2.97%
3.96%
11.88%
0.99%
0.99%
0-20
20-40
40-60
60-80
80-100
100-120
120-140
140-160
160-180
>200
Score
Company
Total Employees
F&T Sales & Service
James Brothers Construction
Quincy Engineering
60
2
30
Company
Previous Litigation
F&T Sales & Service
James Brothers Construction
Quincy Engineering
GREEN
RED
GREEN
Company
D&B Compliance Risk Score
F&T Sales & Service
James Brothers Construction
Quincy Engineering
30
180
23
Supplier Notes:
Company
Supplier Reason Codes
F&T Sales & Service
James Brothers Construction
Quincy Engineering
Risk Score exceeds 700
Company has past debarment
Supported Action (Supplier)
Award to James Brothers Construction will require justification and is subject to further review.
Consider doing further research prior to award to James Brothers Construction which has very high risk. Document the electronic contact file with findings if necessary.

FIG.12b

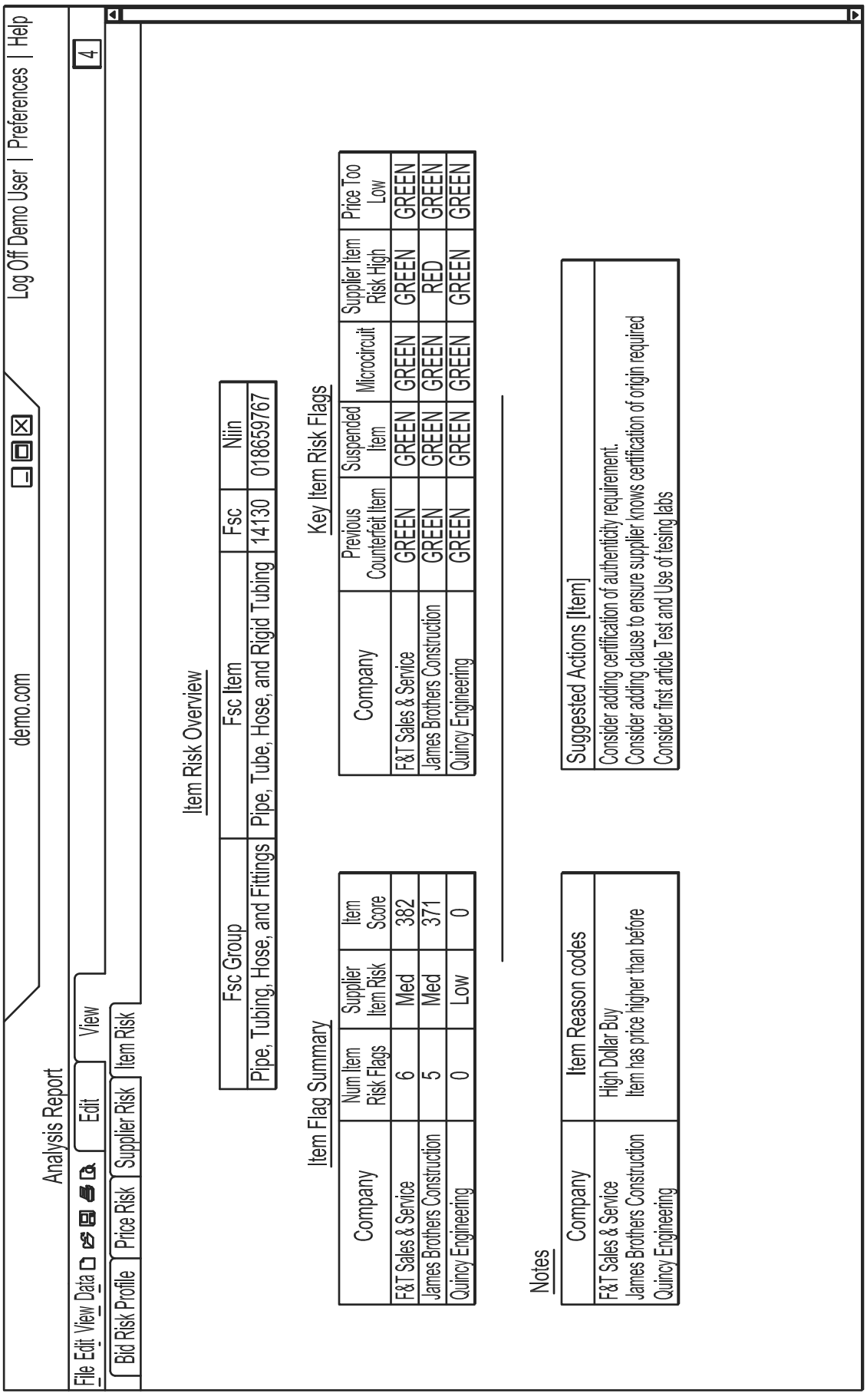

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Analysis Report
File Edit View Data
Edit
View
4
Bid Risk Profile
Price Risk
Supplier Risk
Item Risk
Item Risk Overview
Fsc Group
Fsc Item
Fsc
Niin
Pipe, Tubing, Hose, and Fittings
Pipe, Tube, Hose, and Rigid Tubing
14130
018659767
Item Flag Summary
Company
Num Item Risk Flags
Supplier Item Risk
Item Score
F&T Sales & Service
6
Med
382
James Brothers Construction
5
Med
371
Quincy Engineering
0
Low
0
Key Item Risk Flags
Company
Previous Counterfeit Item
Suspended Item
Microcircuit
Supplier Item Risk High
Price Too Low
F&T Sales & Service
GREEN
GREEN
GREEN
GREEN
GREEN
James Brothers Construction
GREEN
GREEN
GREEN
RED
GREEN
Quincy Engineering
GREEN
GREEN
GREEN
GREEN
GREEN
Notes
Company
Item Reason codes
F&T Sales & Service
High Dollar Buy
James Brothers Construction
Item has price higher than before
Quincy Engineering
Suggested Actions [Item]
Consider adding certification of authenticity requirement.
Consider adding clause to ensure supplier knows certification of origin required
Consider first article Test and Use of tesing labs

FIG. 13