BW PtP - Sprint PIR Price change /!\ Obsolete /!\

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The new wiki link for this data flow is here:

Technical Documentation - Procurement - SPRINT report

Please update the new doc there and no longer here.

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General presentation

Objective of the application

This report / application is to track the **P**urchase **I**nfo **R**ecord price change information by change date

Before this report, the business was retrieving information on Purchasing Info Record (PIR) price changes from the following back end reports (the reports have a different name per back end report in PF1 and WP1 but are basically the same):

TRANSACTION	PROGRAM	DESCRIPTION
ZWPU83	ZWPUR05800	Report for PIR Price Modifications – WP1
Z1M_PIR_PRICE_MODIFS	Z1M_PIR_PRICE_MODIFS	Report for PIR Price Modifications – PF1

The above reports provide differences in Price only when the calculations based on the Condition records assigned to the PB** conditions set at PIR (Changes to the PIR's price condition, which are saved in table CDHDR with OBJECTCLAS = COND_A.). But, there are several other factors that impacts the PIR price information changes. This application is to handle all the relevant factors that affect the PIR price changes.

Tool Leader + IT leader of the application:

Reporting Coordinator : Duarte Costa (Lisbon)

Purchasing Data and P-t-P Interface Manager : Sylvie Severini (Brussels)

Usage information

D&A and buyers are the key users of this report

History

Business requested a BW report that can provide a structure similar to the above mentioned reports in PF1 and WP1 and that is able to provide the price changes per material Base Unit of Measure and also per last condition record unit of measure considering changes done not only to the condition records but the Price Unit information and its quantity conversions.

Requestor: Luis Dias

Roles & Access

Roles and access

List of application role + menu role and explanation if we have several applications role with specials rules.

Role Code	Role Description	Explanation
ZR_RCS_CA_M04	SPRINT - Purchasing	Role menu ZR_RCS_CA_M04 uses application role ZR_RCS_SPRINT2_A01 linked to IA_PUR_SPRINT* Authorization Object ZBI_SPRINT2 / Authorization on zone, GBU, Plant.

Authorization objects

List of authorization objects mandatory for the application.

Authorization object	Explanation
Plant (C_PLANT)	ZR_*_CA_P02 ZR_7866_CA_P02 => Plant 7866 - Chalampé (ex 7027) - (Cie ZFR9) ZR_TOUT_CA_P02 => All Plants "Solvay"

Dataflow overview

Extraction:

The key logic was built in extractor. The extraction logic was built in such a way that the relevant field's (that affect the price changes) old value and new value should be captured in the extraction.

But, the key challenge is we always have the latest values in the tables. Previous values can only be captured using the change documents (CDHDR & CDPOS).

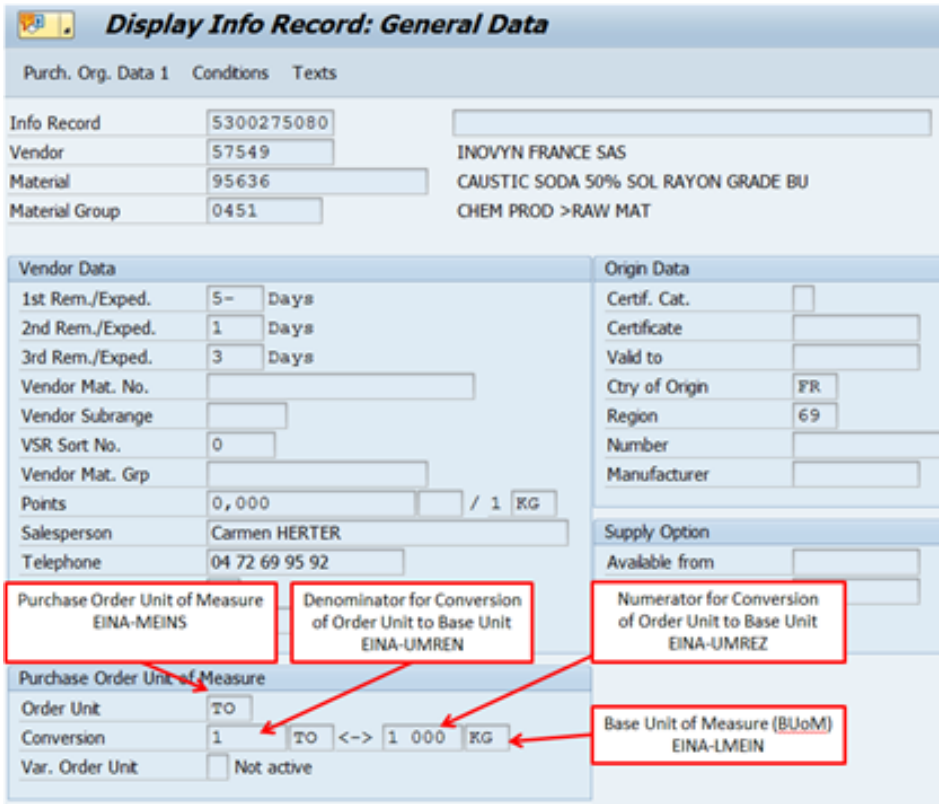
Example:

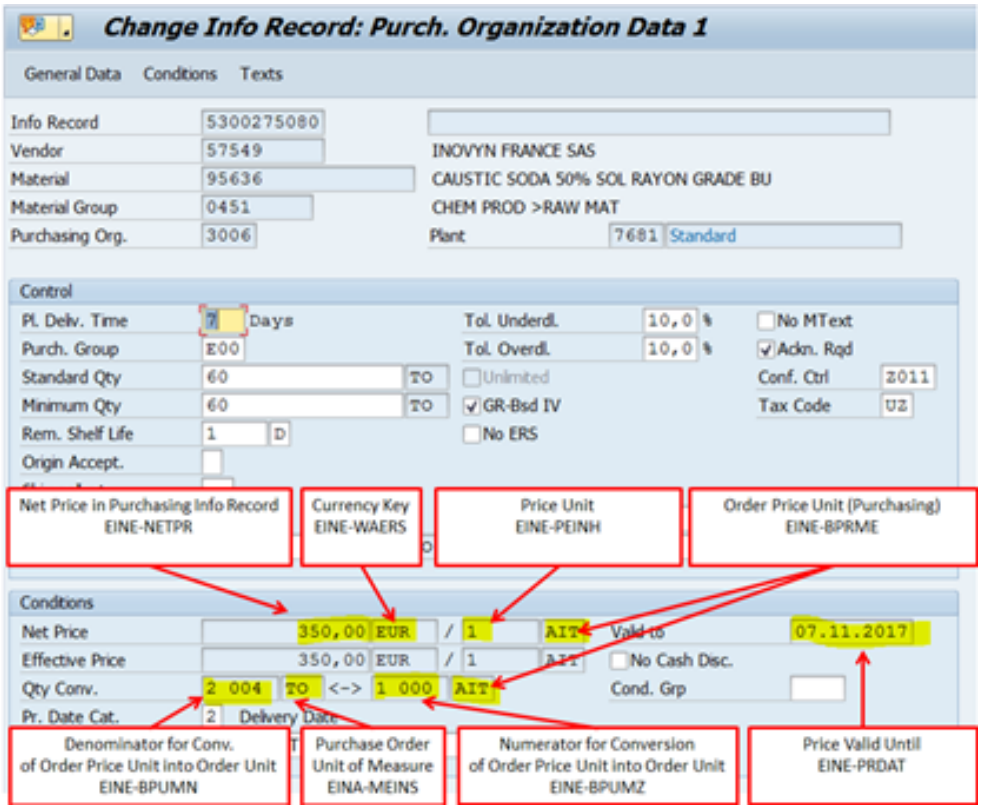
If Purchase order unit of measure (EINA-MEINS) changed from KG to TO...

We will have the value "TO" in the table EINA. But to get the previous value (KG), we need to scan through all the change documents for that PIR.

Extraction logic:

Only the below list of 12 fields are relevant for price differences.





Using the function module "CHANGEDOCUMENT_READ", the extractor picks the change documents of the given date range. Only by keeping the above 12 field's changes, remaining changed were discarded.

In that selected documents, for each change document and its PIR, the subsequent document will be verified in the same list that was selected. If the subsequent document found in the selected list, we will read that document to capture both old & new values. Old values are considered from old change document number and the new value considers from the next available subsequent change document for the same PIR.

If the subsequent document is not found in the initially selected documents, the program again scans for the next available change document of the PIR number. This way of scanning continues for all the relevant 12 fields changes are found. Using both the change documents, it captures both old values & new values of each change document. If subsequent change document is not found for any of the PIR, it means; that particular PIR is not changed after. It means, the existing value for that PIR is the new value for that field.

After capturing the both old & new values of each PIR & change document, the extractor gets the outcome in below format.

Result of Extraction of DataSource DTS_BW_PIR_PRCHANGE

Data Package (Number of Recs) 1 (14)

Object Value	Doc. no.	User	Date	Time	TCode	Table	Table Key	Old value	New value	Old value	New value	Old value	New value	Old value	New value	Old value	New value	Old value	New value
5300000689	4412155	PT99375658	03.01.2017	17:04:45	ME12	EINE	1105300000689300600195	KG	KG	1	1	1	1	KG	KG	0,00 EUR	5,00 EUR	EUR	EUR
5300000688	4412157	PT99375658	03.01.2017	17:06:13	ME12	EINE	1105300000688300600195	KG	KG	1	1	1	1	KG	KG	0,00 EUR	5,00 EUR	EUR	EUR
5300005323	4416502	DJUVANON	18.01.2017	18:01:40	ME12	EINE	1105300005323301400267	KG	KG	1	1	1	1	KG	KG	160,84 USD	160,84 USD	USD	USD
5300005323	4417081	DJUVANON	19.01.2017	14:48:17	ME12	EINE	1105300005323301400267	KG	KG	1	1	1	1	KG	KG	158,35 USD	162,84 USD	USD	USD
5300005323	4419752	DJUVANON	25.01.2017	17:04:35	ME13	EINE	1105300005323301400267	KG	KG	1	1	1	1	KG	KG	162,84 USD	158,35 USD	USD	USD
5300005323	4484088	INRJ0226	27.03.2017	14:19:40	ME12	EINE	1105300005323301400267	KG	KG	1	1	1	1	KG	KG	158,35 USD	162,84 USD	USD	USD
5300005323	4484107	INRJ0226	27.03.2017	14:44:20	ME12	EINE	1105300005323301400267	KG	KG	1	1	1	1	KG	KG	162,84 USD	160,84 USD	USD	USD
5300005323	4484201	INRJ0226	27.03.2017	18:16:17	ME12	EINE	1105300005323301400267	KG	KG	1	1	1	1	KG	KG	160,84 USD	162,84 USD	USD	USD
5300005323	4484578	INRJ0226	28.03.2017	13:09:47	ME12	EINE	1105300005323301400267	KG	KG	1	1	1	1	KG	KG	162,84 USD	160,84 USD	USD	USD
5300005323	4484758	INRJ0226	28.03.2017	15:46:21	ME12	EINE	1105300005323301400267	KG	KG	1	1	1	1	KG	KG	160,84 USD	162,84 USD	USD	USD
5300005323	4508831	DJUVANON	31.03.2017	13:56:47	ME13	EINE	1105300005323301400267	KG	KG	1	1	1	1	KG	KG	162,84 USD	179,98 USD	USD	USD
5300005323	4508835	DJUVANON	31.03.2017	14:02:54	ME13	EINE	1105300005323301400267	KG	KG	1	1	1	1	KG	KG	179,98 USD	189,98 USD	USD	USD
5300005323	4508849	DJUVANON	31.03.2017	14:12:30	ME13	EINE	1105300005323301400267	KG	KG	1	1	1	1	KG	KG	189,98 USD	191,50 USD	USD	USD
5300005323	4508851	DJUVANON	31.03.2017	14:18:15	ME13	EINE	1105300005323301400267	KG	KG	1	1	1	1	KG	KG	191,50 USD	192,50 USD	USD	USD

Old value	New value	Old value	New value	Old value	New value	Old value	New value	Old value	New value	Info record	Vendor	Material	POrg	Plant	PGr	Crcy
1	1	KG	KG	1	1	1	1	99991231	99991231	5300000689	92202	92207	3006	0195	F01	EUR
1	1	KG	KG	1	1	1	1	31.12.9999	31.12.2017	5300000688	92202	92208	3006	0195	F01	EUR
1000	1000	KG	KG	1	1	1	1	31.12.9999	31.12.2017	5300005323	51033	72947	3014	0267	GEG	USD
1000	1000	KG	KG	1	1	1	1	20171231	20171231	5300005323	51033	72947	3014	0267	GEG	USD
1000	1000	KG	KG	1	1	1	1	20171231	20171231	5300005323	51033	72947	3014	0267	GEG	USD
1000	1000	KG	KG	1	1	1	1	20171231	20171231	5300005323	51033	72947	3014	0267	GEG	USD
1000	1000	KG	KG	1	1	1	1	20171231	20171231	5300005323	51033	72947	3014	0267	GEG	USD
1000	1000	KG	KG	1	1	1	1	20171231	20171231	5300005323	51033	72947	3014	0267	GEG	USD
1000	1000	KG	KG	1	1	1	1	20171231	20171231	5300005323	51033	72947	3014	0267	GEG	USD
1000	1000	KG	KG	1	1	1	1	20171231	20171231	5300005323	51033	72947	3014	0267	GEG	USD
1000	1000	KG	KG	1	1	1	1	20171231	20171231	5300005323	51033	72947	3014	0267	GEG	USD
1000	1000	KG	KG	1	1	1	1	20171231	20171231	5300005323	51033	72947	3014	0267	GEG	USD
1000	1000	KG	KG	1	1	1	1	20171231	20171231	5300005323	51033	72947	3014	0267	GEG	USD
1000	1000	KG	KG	1	1	1	1	20171231	20171231	5300005323	51033	72947	3014	0267	GEG	USD

Each record represents the above said 12 fields old and new values at change document level.

The extractor is available in both the Solvay & Rhodia systems (WP1 & PF1)

BW Data model:

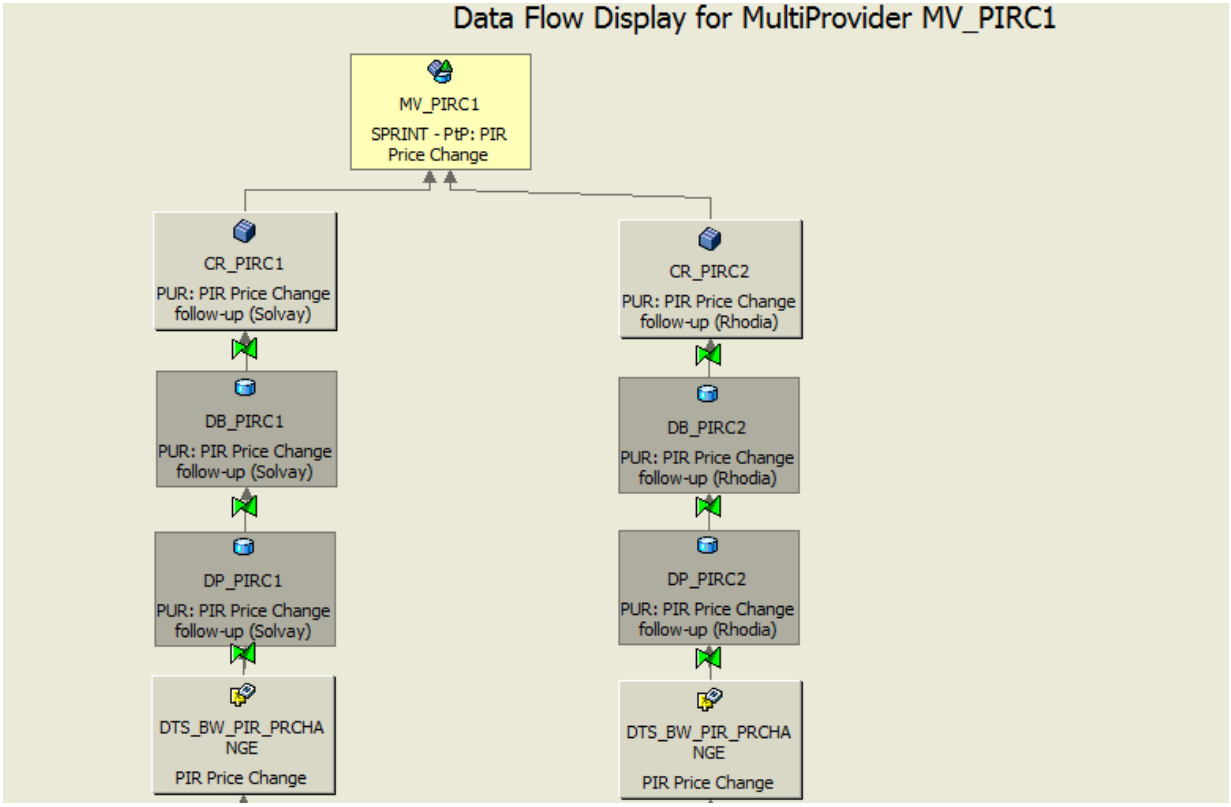
Just for the sake of quick understanding here is the field mapping details between data source fields & BW info objects

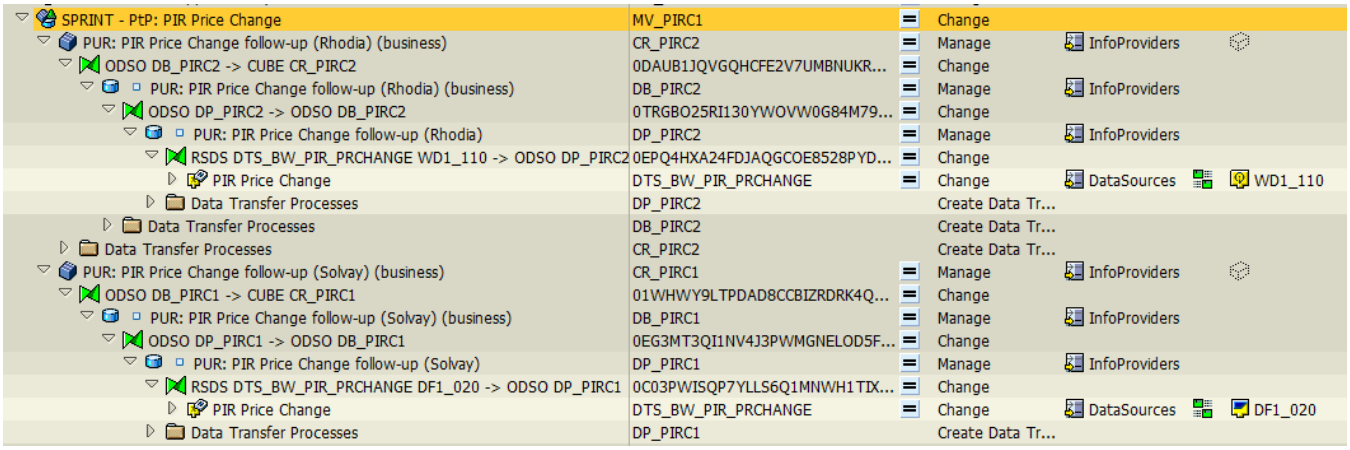
C_O* Old Value

C_N* New Value

DP_PIRC1		**DB_PIRC1**	
C_O_MEINS	PO Unit of Measure	0PO_UNIT	
C_N_MEINS		0UNIT	
C_O_UMREN	Denominator	0DENOMINTR	
C_N_UMREN		K_DENMNTR	
C_O_UMREZ	Numerator	0NUMERATOR	
C_N_UMREZ		K_NUMERTR	
C_O_LMEIN	Base Unit of Measure	0BASE_UOM	
C_N_LMEIN		C_BASUOM2	
C_O_NETPR	Net Price in PIR	0NETPRICE	0LOC_CURRCY
C_N_NETPR		0NET_PRICE	0DOC_CURRCY
C_O_WAERS	Currency	0ORDER_CURR	
C_N_WAERS		0CURRENCY	
C_O_PEINH	Price Unit	0PRICE_UNIT	

C_N_PEINH		K_PEINH	
C_O_BPRME	Order Price Unit	C_OP_UNIT	
C_N_BPRME		C_FNEWUNT	
C_O_BPUMN	Denominator1	K_BPUMN	
C_N_BPUMN		K_DNMNTR1	
C_O_BPUMZ	Numerator1	K_BPUMZ	
C_N_BPUMZ		K_NUMRTR1	
C_O_PRDAT	Validity date	C_PRDAT	
C_N_PRDAT		C_LPRDAT	
U_DEV_FIA	Vendor Currency	U_DEV_FIA	





Extractor brings the data in to BW with both old & new values of the PIR at change document level.

The extraction data mapped to the propagation layer DSO, as it is.

The business logic and calculations are built in between propagation layer & business layer DSO's. This include the currency conversions also. Since the conversion is based on the document change date, the currency conversion calculations are done at the transformation level using the conversion rate "CAR1".

Reporting documentation drive folder:

https://drive.google.com/drive/folders/1ztdFqaCBEoDcpm_2156MYKsqTrAbLcyV

In the above folder (Link), FSD, TSD & Data source core logic details are available.

Functional and Technical rules on Workbench + Reporting

Rules & Explanations

All the KPI calculations are explained in this section

All the below calculations are performed in below two transformation's end routine.

ODSO DP_PIRC2 -> ODSO DB_PIRC2

ODSO DP_PIRC1 -> ODSO DB_PIRC1

1. Old Price in Order Price Unit in Info record currency = Old Net Price / Old Price Unit

```
IF <result_fields>-price_unit IS NOT INITIAL.
  <result_fields>-/bic/k_iropop = <result_fields>-netprice /
  <result_fields>-price_unit.
ENDIF.
<result_fields>-/bic/c_curr_1 = <result_fields>-loc_currcy.
```

2. New Price in Order Price Unit in Info record currency = New Net Price / New Price Unit

```
IF <result_fields>-/bic/k_peinh IS NOT INITIAL.
  <result_fields>-/bic/k_iropnp = <result_fields>-net_price /
  <result_fields>-/bic/k_peinh.
ENDIF.
```

3. Delta % in point 1 & 2 = (1 - 2) / 1

```
IF <result_fields>-/bic/k_iropnp IS NOT INITIAL.
  <result_fields>-/bic/k_delpup = (
  <result_fields>-/bic/k_iropnp
  - <result_fields>-/bic/k_iropop ) /
  <result_fields>-/bic/k_iropnp.
ENDIF.
```

4. Delta in point 1 & 2 = (1 - 2)

```
<result_fields>-/bic/k_delcup = ( <result_fields>-/bic/k_iropnp
- <result_fields>-/bic/k_iropop ).
```

5. Old price in base UoM in info record currency

```
        IF <result_fields>-base_uom IS NOT INITIAL AND
           <result_fields>-/bic/c_op_unit IS NOT INITIAL.
          IF <result_fields>-base_uom = <result_fields>-/bic/c_op_unit.
            IF <result_fields>-price_unit IS NOT INITIAL.
              <result_fields>-/bic/k_irbuop = <result_fields>-netprice /
              <result_fields>-price_unit.
            ENDIF.
          ELSEIF ( <result_fields>-/bic/c_op_unit <>
                 <result_fields>-base_uom ) AND
                 ( <result_fields>-/bic/c_op_unit =
                   <result_fields>-po_unit ) AND
                 <result_fields>-numerator IS NOT INITIAL.
            IF <result_fields>-denomintr IS NOT INITIAL AND
               <result_fields>-price_unit IS NOT INITIAL.
              <result_fields>-/bic/k_irbuop =
              ( <result_fields>-netprice / <result_fields>-price_unit )
            * ( <result_fields>-denomintr / <result_fields>-numerator ).
            ENDIF.
          ELSEIF ( <result_fields>-/bic/c_op_unit <>
                 <result_fields>-base_uom ) AND
                 ( <result_fields>-/bic/c_op_unit <>
                   <result_fields>-po_unit ) AND
                 <result_fields>-numerator IS NOT INITIAL.
            IF <result_fields>-denomintr IS NOT INITIAL AND
               <result_fields>-price_unit IS NOT INITIAL AND
```

```
               <result_fields>-price_unit IS NOT INITIAL AND
               <result_fields>-/bic/k_bpumn IS NOT INITIAL.
              <result_fields>-/bic/k_irbuop =
              ( <result_fields>-netprice / <result_fields>-price_unit )
            * ( <result_fields>-denomintr / <result_fields>-numerator )
            * ( <result_fields>-/bic/k_bpumz /
              <result_fields>-/bic/k_bpumn ).
            ENDIF.
          ENDIF.
        ENDIF.
```

6. New price in base UoM in info record currency

```
IF <result_fields>-/bic/C_BASUOM2 IS NOT INITIAL AND
   <result_fields>-/bic/C_FNEWUNT IS NOT INITIAL.
  IF <result_fields>-/bic/C_BASUOM2 =
  <result_fields>-/bic/C_FNEWUNT.
    IF <result_fields>-/bic/K_PEINH IS NOT INITIAL.
      <result_fields>-/bic/k_irbunp =
      <result_fields>-net_price /
      <result_fields>-/bic/K_PEINH.
    ENDIF.
  ELSEIF ( <result_fields>-/bic/C_FNEWUNT <>
         <result_fields>-/bic/C_BASUOM2 ) AND
         ( <result_fields>-/bic/C_FNEWUNT =
           <result_fields>-unit ) AND
         <result_fields>-/bic/K_NUMERTR IS NOT INITIAL.
    IF <result_fields>-/bic/K_DENMNTR IS NOT INITIAL AND
       <result_fields>-/bic/K_PEINH IS NOT INITIAL.
      <result_fields>-/bic/k_irbunp =
      ( <result_fields>-net_price /
        <result_fields>-/bic/K_PEINH )
    * ( <result_fields>-/bic/K_DENMNTR /
    <result_fields>-/bic/K_NUMERTR ).
    ENDIF.
  ELSEIF ( <result_fields>-/bic/C_FNEWUNT <>
         <result_fields>-/bic/C_BASUOM2 ) AND
         ( <result_fields>-/bic/C_FNEWUNT <>
           <result_fields>-unit ) AND
```

```
           <result_fields>-/bic/K_NUMERTR IS NOT INITIAL.
    IF <result_fields>-/bic/K_DENMNTR IS NOT INITIAL AND
       <result_fields>-/bic/K_PEINH IS NOT INITIAL AND
       <result_fields>-/bic/K_DNMNTR1 IS NOT INITIAL.
      <result_fields>-/bic/k_irbunp =
      ( <result_fields>-net_price /
        <result_fields>-/bic/K_PEINH )
    * ( <result_fields>-/bic/K_DENMNTR /
        <result_fields>-/bic/K_NUMERTR )
    * ( <result_fields>-/bic/K_NUMRTR1 /
        <result_fields>-/bic/K_DNMNTR1 ).
    ENDIF.
  ENDIF.
ENDIF.
```

7. Delta % of Old price in base UoM in info record currency & New price in base UoM in info record currency

```
IF <result_fields>-/bic/k_irbuop IS NOT INITIAL.
  <result_fields>-/bic/k_delpbp = (
  <result_fields>-/bic/k_irbunp - <result_fields>-/bic/k_irbuop
  ) / <result_fields>-/bic/k_irbuop.
ENDIF.
```

8. Delta in Old price in base UoM in info record currency & New price in base UoM in info record currency

```
IF <result_fields>-/bic/k_irbuop IS NOT INITIAL.
  <result_fields>-/bic/k_delcbp = (
  <result_fields>-/bic/k_irbunp - <result_fields>-/bic/k_irbuop
  ).
ENDIF.
```

9. Old Price in Order Price Unit in Vendor Currency

```
IF <result_fields>-loc_currcy = <result_fields>-/bic/u_dev_fia.
  <result_fields>-/bic/k_opvcop = <result_fields>-netprice.
  <result_fields>-/bic/c_vcurr  = <result_fields>-/bic/c_curr_1.
ELSE.
```

Convert the NETPRICE to vendor currency using FM "Convert_To_Foreign_Currency"

10. New Price in Order Price Unit in Vendor Currency

Convert the NET_PRICE to vendor currency using FM "Convert_To_Foreign_Currency"

11. Delta % of old & New order price Unit in vendor currency

Convert the K_DELPUP to vendor currency using FM "Convert_To_Foreign_Currency"

12. Delta of old & New order price Unit in vendor currency

Convert the K_DELCUP to vendor currency using FM "Convert_To_Foreign_Currency"

13. Old price in base UoM in Vendor currency

Convert the K_IRBUOP to vendor currency using FM "Convert_To_Foreign_Currency"

14. New price in base UoM in Vendor currency

Convert the K_IRBUNP to vendor currency using FM "Convert_To_Foreign_Currency"

15. Delta % of Old price in base UoM in Vendor currency & New price in base UoM in Vendor currency

Convert the K_IRBUOP to vendor currency using FM "Convert_To_Foreign_Currency"

16. Delta in Old price in base UoM in Vendor currency & New price in base UoM in Vendor currency

Convert the K_IRBUNP to vendor currency using FM "Convert_To_Foreign_Currency"

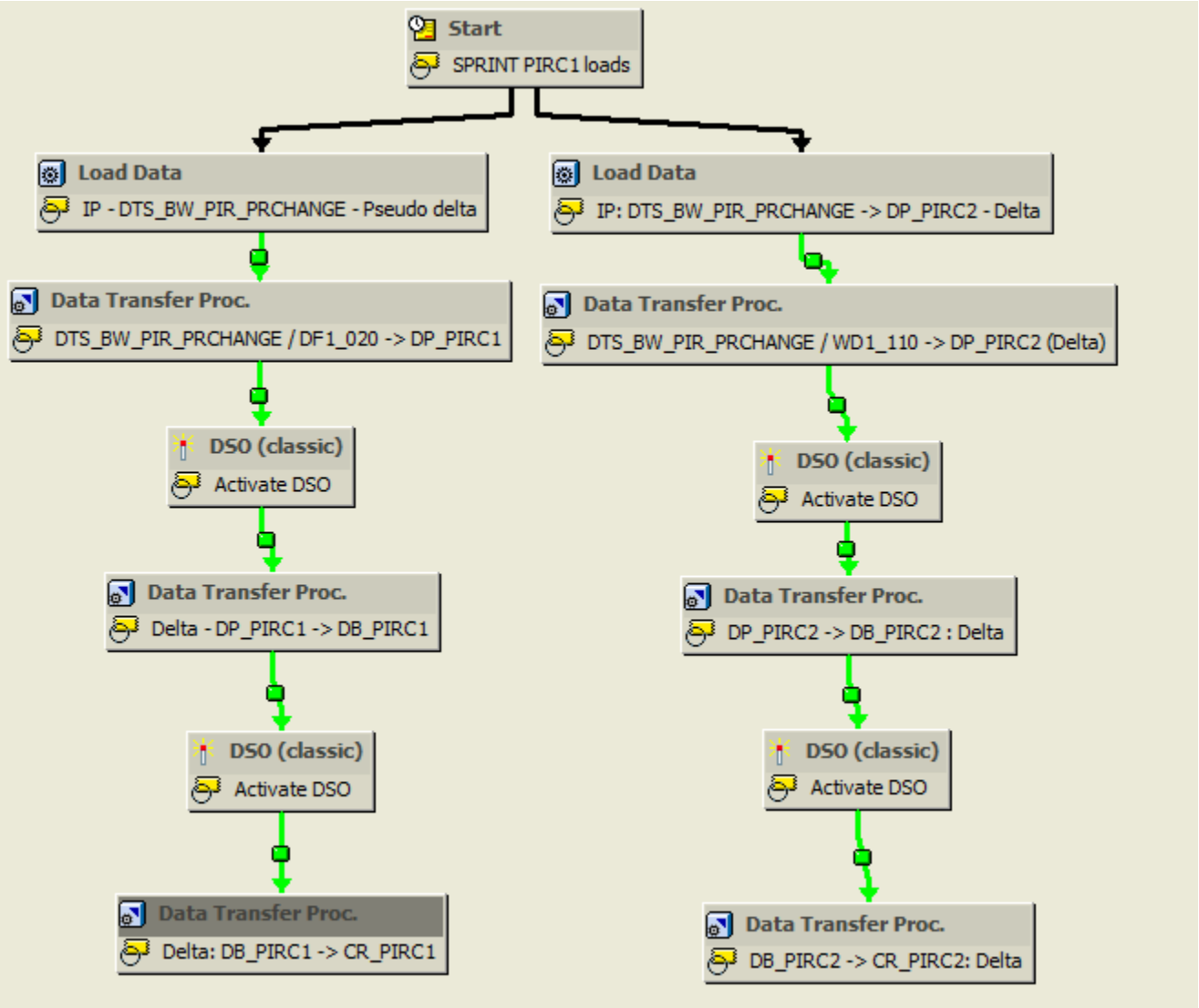
Dependencies with other applications

This is an independent data model.

Data loadings

Info providers and objects loaded

Process Chain: PC_SPRINT_PIRC1



Loading frequency

Daily loads (except week end) using pseudo delta with current day - 4 days logic

Average performance

Key Figure	Estimation
~ Average Process Chain Runtime	2 minutes
~ Average nb of rows loaded per load	50 - 100
~ Total nb of rows loaded (if full)	
~ Average Runtime for 10k lines	

Record Keeping

Data loaded from 2015 - till date

Reporting

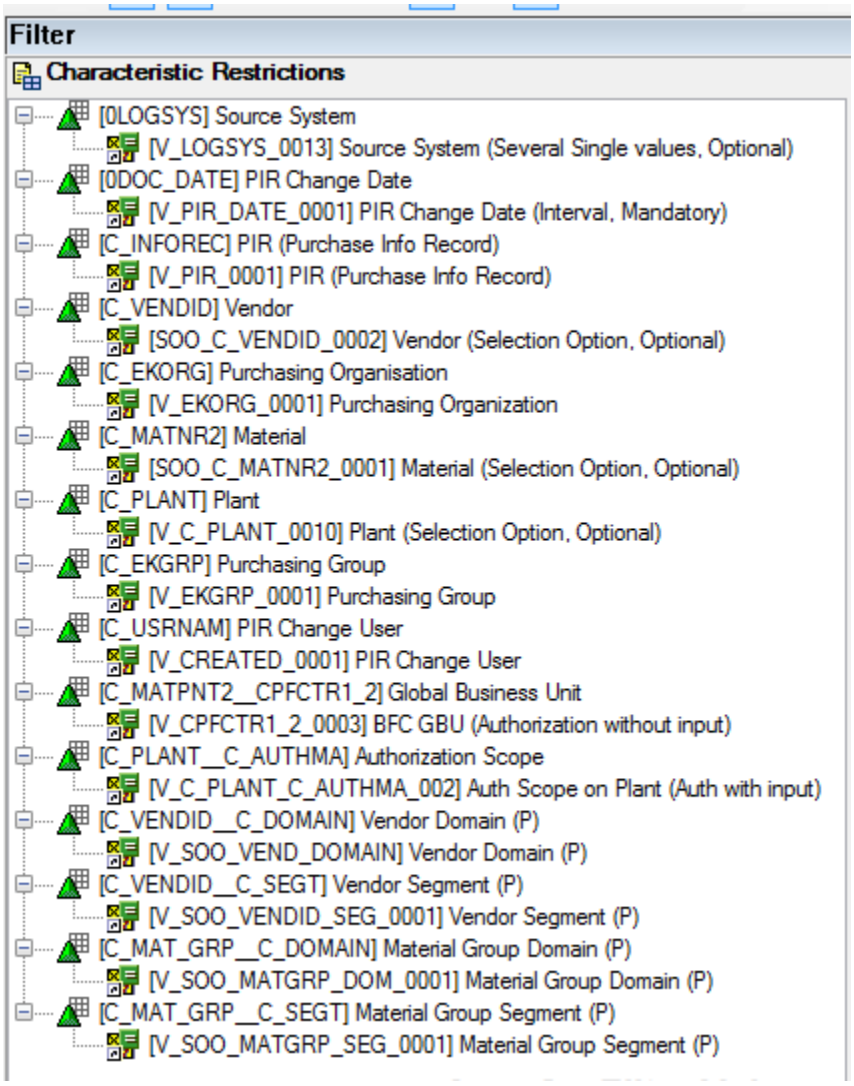
Queries End User Documentation

Main queries

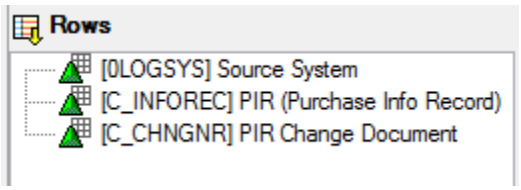
The core Query:

BW_QRY_MV_PIRC1_0001 - SPRINT - PUR : PIR Price Analysis (Core Query)

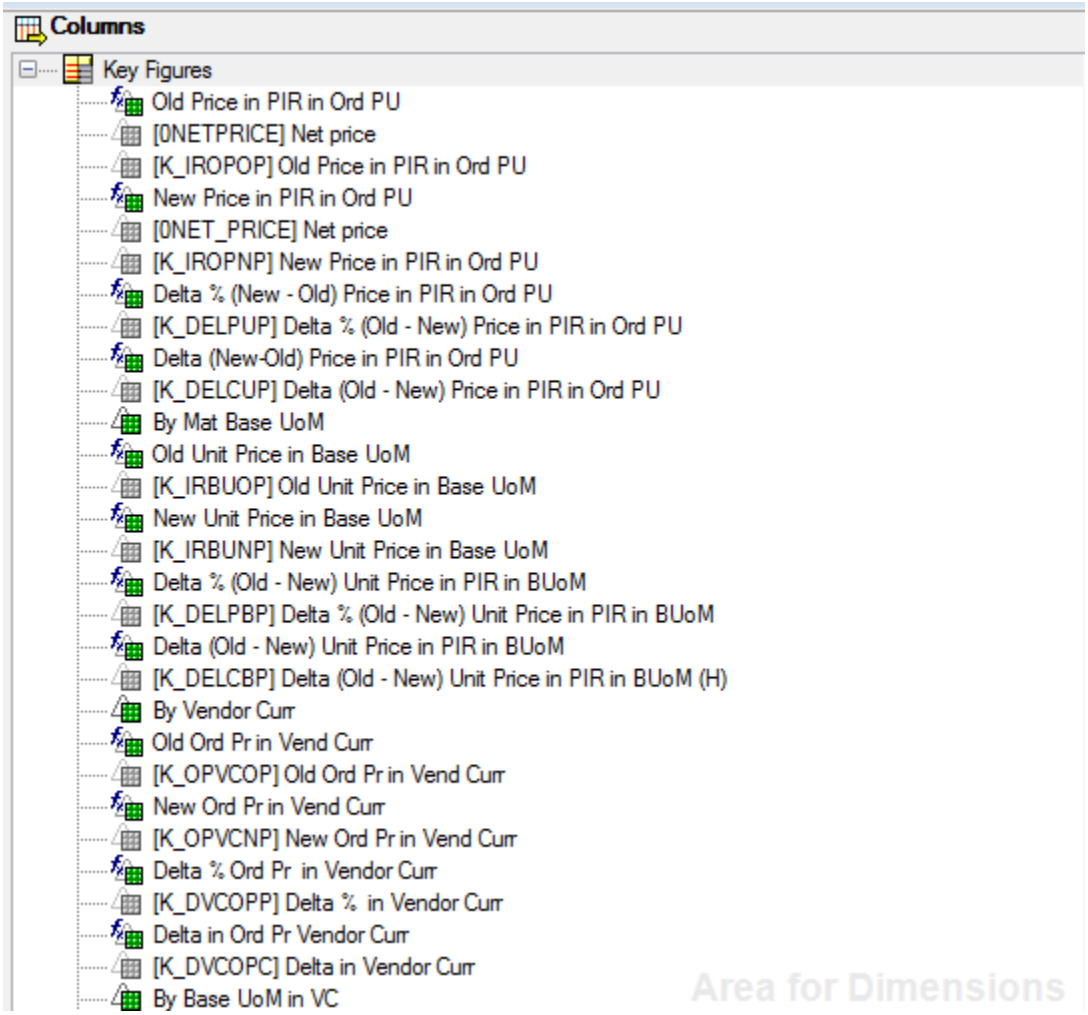
Filters:

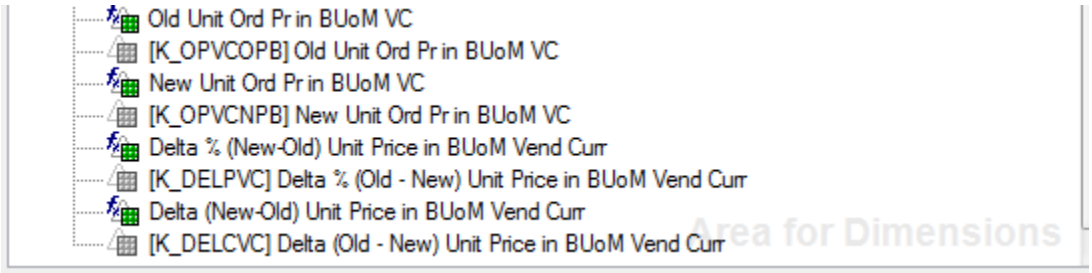


Rows:



Columns:





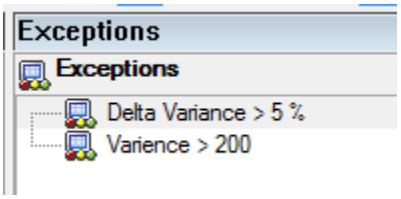
All the key figures are displayed without dimensions (units) as requested by business

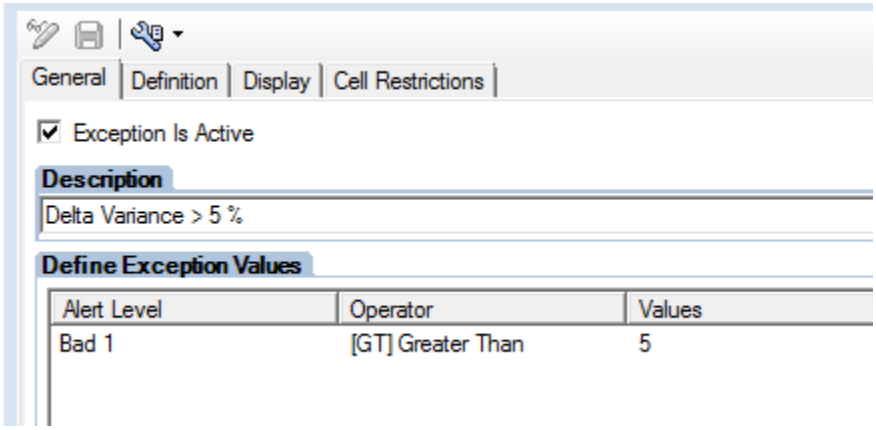
Exceptions:

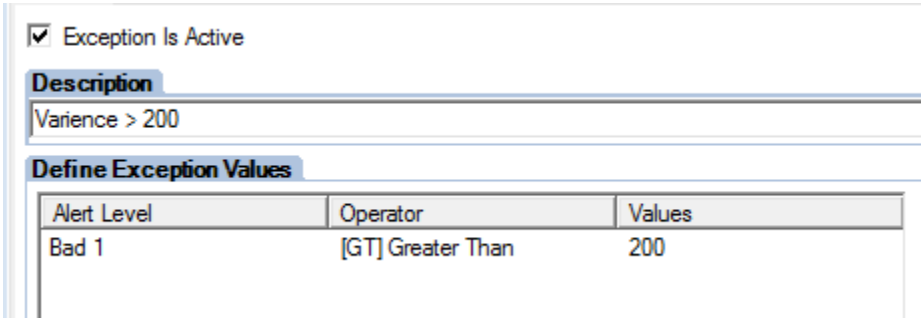
As per the business requirement, there are two exceptions in the query to show in different color where...

Delta variance is greater than 5%

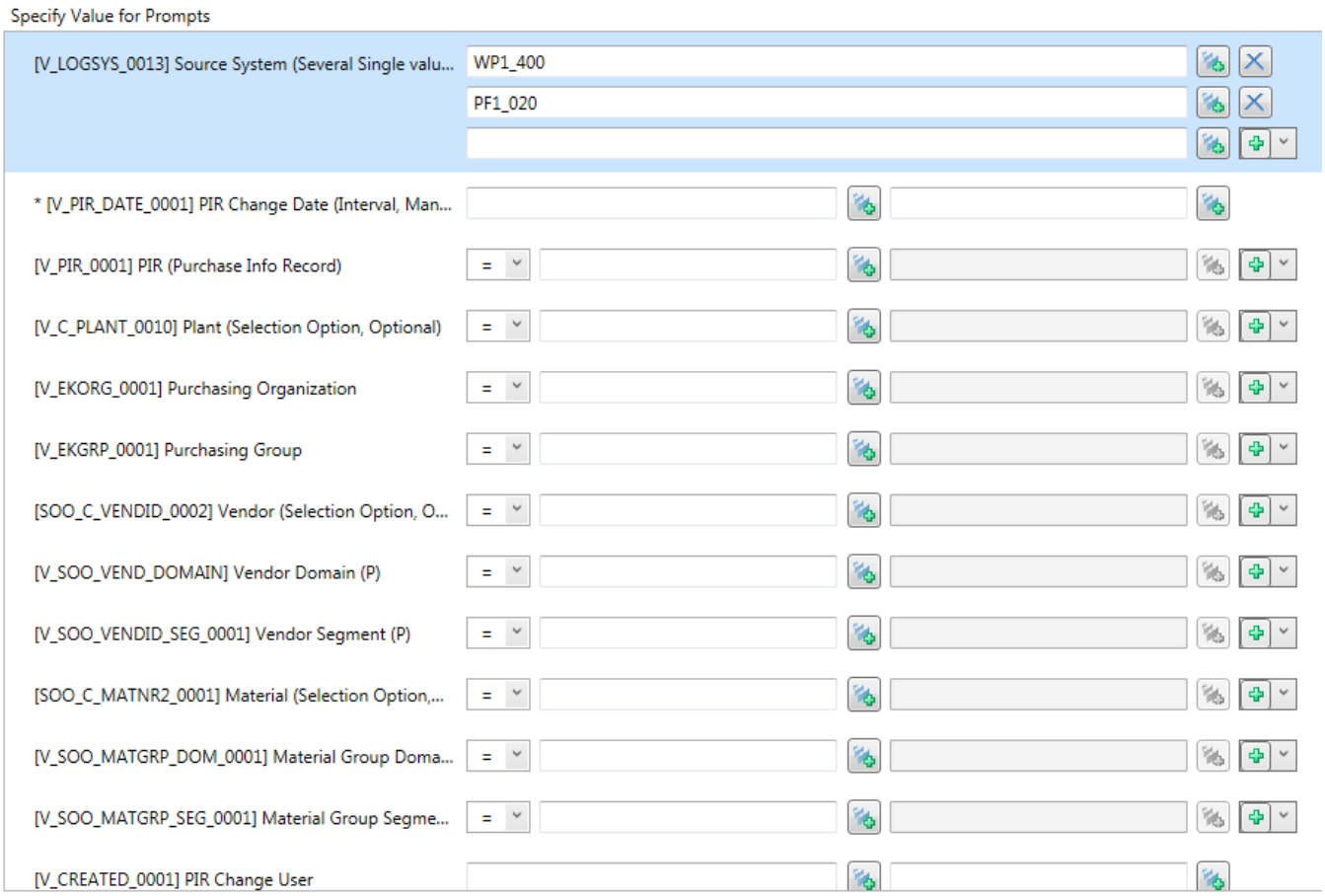
Variance greater than 200







Selection Screen:



Report Output:

A	B	C	D	E	F	G
Source System	**PIR (Purchase Info Record)**	**PIR Change Document**	Old Price in PIR in Ord PU	New Price in PIR in Ord PU	Delta % (New - Old) Price in PIR in Ord PU	Delta (New-Old) Price in PIR in Ord PU
WP1 Client 400	#/#/#/#/5300303154	392026829	0.00	0.00	0.00	0.00
	#/#/#/#/5300427218	391558509	0.00	0.00	0.00	0.00
	#/3001/#/#/5300131763	391567555	17.05	17.05	0.00	0.00
	#/3001/#/#/5300144382	391592707	239.81	239.81	0.00	0.00
	#/3001/#/#/5300249781	391611148	98.00	98.00	0.00	0.00
	#/3001/#/#/5300249986	391608063	55.30	55.30	0.00	0.00
	#/3001/#/#/5300260332	391611470	61.30	61.30	0.00	0.00
	#/3001/#/#/5300263206	391611468	0.42	0.42	0.00	0.00
	#/3001/#/#/5300263207	391608003	32.00	32.00	0.00	0.00
	#/3001/#/#/5300264351	391611449	61.00	61.00	0.00	0.00
	#/3001/#/#/5300391239	391545322	14.90	14.90	0.00	0.00
	#/3002/#/#/5300357897	392108623	10.29	1.15	-88.82	-9.14
		392109263	1.15	1.15	0.00	0.00
		392109324	1.15	0.00	-100.00	-1.15
	#/3002/#/#/5300423258	391858418	611.00	611.00	0.00	0.00
	#/3004/#/#/5300000300	391564351	15.76	10.01	-36.48	-5.75
	#/3004/#/#/5300000321	391564411	476.85	331.34	-30.51	-145.51
	#/3004/#/#/5300000325	391589575	0.00	90.27	0.00	90.27
	#/3004/#/#/5300000559	391554421	0.00	3,900.00	0.00	3,900.00
	#/3004/#/#/5300002514	391571135	389.00	389.00	0.00	0.00
	#/3004/#/#/5300005560	391579235	18.98	18.98	0.00	0.00
	#/3004/#/#/5300017393	392102881	455.00	367.52	-19.23	-87.48
	#/3004/#/#/5300017823	391989909	289.30	328.35	13.50	39.05

Exception example:

K
Delta % (Old - New) Unit Price in PIR in BUoM
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
0.00
-88.82
0.00
-100.00
-90.00
-36.48
-30.51
0.00
0.00
0.00
0.00
-19.23
13.50

Main functionalities

Broadcast

Maintenance

Known bugs

Recurring procedure

Planned Evolution