Automating Supplemental Price Quotes in F&A Pricing

Applies to:

This document applies to SAP 4.6C and all later on Versions till ECC 6.0.

For more information, visit the Oil & Gas homepage.

Summary

This document discusses on Automating the switching between Supplemental Price Quotes and Main Price Quotes used in Formulae & Average Pricing in SAP SD.

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Introduction

The prices in Oil industry fluctuates daily. Price quotes for material gets picked up daily based on availability of quotes by different oil Exchanges. This article describes how to make system arrangements in terms of smart logics & creating routines for accommodating automatic switching ON/OFF supplemental Quotes in Formulae and Average (F&A) Pricing in IS oil. This automation stands independent of different oil Exchanges and Customized "Z" objects

Requirement

The IS - oil specific pricing happens based on daily published price Quotes from different oil exchanges. Everyday Price quotes from different oil exchanges like Platts, Opis, Nymex comes to SAP through interface & sits in Standard or Customized "Z" table. Each Material is linked to a particular Price quote uniquely in F&A pricing.

Every spring and summer the Price Quote switches to a Supplemental quote but they don't provide a prior notice as on which day / date this switch would occur. Therefore, the F&A condition records maintained for contracts & Sale orders cannot be changed ahead of time. However, if Quote source switches to the Supplemental quote and the Sales documents are not switched then the invoices are all based on the wrong Quote symbol and have to go through the credit/rebill process.

	Main Quote (PLATS)		Supplemental Quote (PLATS)	
Season	Quote Symbol	RVP	Quote Symbol	RVP
Winter	**PGACT00**	9#		
Spring	**PGACT00**	7.8 #	**PGAAB00**	9#
Summer	**PGACT00**	7.8 #	**PGAAB00**	9#
Fall	**PGACT00**	9#		

In the fall, when the Supplemental quote suddenly stops getting posted by Oil Exchange, there is still manual work required as the invoices get blocked and the contracts are need to be changed again. This results in lot of extra manual efforts from the user end in terms of Modification / cancellation / re creation of SAP documents like Contracts, Sales orders & Invoices.

Our concern was to automate this system & save manual efforts on this.

How to Achieve

To Achieve this, we can do following:

1. Create a requirement routine which can intelligently switch between the main and Supplemental quote.
2. Smart Settings in F&A pricing condition record to make pricing workflow uninterruptible.

Event (Process) Creation

As part of process creation, we will follow following steps to automate supplemental price quotes in pricing for Sales documents.

1. Identify the supplemental Quotes from main Quotes.

    a. PGAAB00 – Supplemental Quote.

    b. PGACT00 – Main Quote.

2. Maintain Supplemental Quote in TERM A with all relevant details

    a. The details can be maintained for single quote

    b. The details can be maintained for Combination of More than 1 quote.

The Total of Factor 1 should come out as '1', when Quotes used in Combinations.

3. Maintain "Final and Provisional Rules" for Term A (Supplemental Quotes).

There are two rules: Provisional Rule & Final Rule.

Provisional rules are used at the time of creation of Sales order, where there is a possibility that at the time of creation of SO, the price quotes are not available. Hence, still the order needs to be saved.

Final rules are used at the time of creation of Invoice, where in, a re-pricing happens, looking out for all available prices in the price table, and finally, saving the document.

For TERM A (Supplemental Quote):

No quotat'n handling field has to be maintained as:

"1" – Ignore & continue in Provisional Rule.

"1" – Ignore & continue in Final rule.

Note: Here, we have purposely marked FINAL RULE indicator as "1". This is because of reason if system no Supplemental price quote is found in pricing table per the FINAL RULE, it should not stop the system giving any error.

The routine code, in turn, at this particular instance switches the control from TERM A to TERM B (main price quote checking).

Hence, in a scenario where no supplemental price quote is available,

system first of all picks TERM A – Supplemental Quote & searches in pricing table for value. If value found, search stops.

If value not found, system does "ignore & continue" per FINAL Rule indicator set as "1".

And then system search moves down to TERM B – Main Price Quote.

4. Maintain Main Quote in TERM B with all relevant details.

   a. The details for Main quote can also be maintained for single quote

   b. The details can also be maintained for Combination of More than 1 quote as shown below.

The total of factor 1 should sum out as '1' when more than 1 quote are used.

5. Maintain "Final and Provisional Rules" for Term B (Main Quotes).

For TERM B (Main Quote):

No quotat'n handling field has to be maintained as:

"1" – Ignore & continue in Provisional Rule.

"2" – Error if no quote in final rule.

Note: Here FINAL Rule for MAIN quote is set as "2" - Error if no quote in final rule. This is because of the reason if Main price Quote is not available, then system should give ERROR message. The document must not get saved any without price in it.

6. Maintenance of A vs B Rule which is a customized routine taking care for such scenario.

This routine can be customized using Transaction code - **O5F5**

Routine Code

This Routine code works irrespective of Customized "Z" objects. The data code will fetch and compare the values among TERM A and TERM B.

```
    DATA: L_A_VALUE LIKE OICF4-FORMVAL,
          L_B_VALUE LIKE OICF4-FORMVAL,
          L_PFIND_USED,
          L_SUBRC LIKE SY-SUBRC.
    DATA: L_A_TERMRATE TYPE P16D14,
          L_B_TERMRATE TYPE P16D14.

    DATA: WA_XOICF6   LIKE LINE OF XOICF6,
          V_FLAG       TYPE C.

    CONSTANTS: C_1  TYPE OICF6-FORTRMTYP VALUE '1',
               C_0  TYPE C VALUE '0'.

* Assume calc was successful and check
  E_OICF4-FORSTATUS = G_FINAL_VALUE.


* Set currency to document currency
  E_OICF4-FORMCURR = E_KOMK-WAERK.


* Find Provisional or final for A Term
  PERFORM CHECK_EVALUATION_STAT USING '1' 'X' L_SUBRC.

  IF L_SUBRC NE 0.
* See if A term was present but not evaluated
    PERFORM CHECK_EVALUATION_STAT USING '1' ' ' L_SUBRC.
    IF L_SUBRC = 0.
      E_OICF4-FORSTATUS = G_FORMULA_EVAL_FAILED.
      EXIT.
    ENDIF.
  ELSE.
* To get the A term only
    LOOP AT XOICF5 WHERE FORTRMTYP = G_TERMS-FORTRMTYP      "A Term
                   AND   PFIND  = G_TERMS-PFIND_USED.

      CASE I_OICF4-RATEBASED.
        WHEN G_RATEBASED_SET.                   "Rate based calculation
          L_A_TERMRATE = XOICF5-TRMRATE_RND.
        WHEN OTHERS.                            "Value based calculation
          ADD  XOICF5-TERMVAL  TO L_A_VALUE.
      ENDCASE.

      PERFORM UPDATE_FORM_STAT USING XOICF5.
    ENDLOOP.
  ENDIF.

* After finding the A term now find the B term.


* Find Provisional or final for B Term
  PERFORM CHECK_EVALUATION_STAT USING '2' 'X' L_SUBRC.
```

```
      IF L_SUBRC NE 0.
*  See if B term was present but not evaluated
         PERFORM CHECK_EVALUATION_STAT USING '2' ' ' L_SUBRC.
         IF L_SUBRC = 0.
           E_OICF4-FORSTATUS = G_FORMULA_EVAL_FAILED.
            EXIT.
         ENDIF.
      ELSE.
*  B term only
         LOOP AT XOICF5 WHERE FORTRMTYP = G_TERMS-FORTRMTYP
                         AND   PFIND     = G_TERMS-PFIND_USED.
           CASE I_OICF4-RATEBASED.
             WHEN G_RATEBASED_SET.                "Rate based calculation
               L_B_TERMRATE = XOICF5-TRMRATE_RND.
             WHEN OTHERS.                          "Value based calculation
               ADD  XOICF5-TERMVAL  TO L_B_VALUE.
           ENDCASE.

           PERFORM UPDATE_FORM_STAT USING XOICF5.
         ENDLOOP.
      ENDIF.

*Determine if term A has to be picked or term B has to be picked.
*If both supplemental (term A) and main quotes (term B) are maintained in
*the condition record, then term A needs to be picked.
*If only main quote is present, then term B must be picked.

   CLEAR V_FLAG.
   CLEAR WA_XOICF6.

   V_FLAG = C_0.

*Check if all the quotes in term A have non-zero quotation values
   LOOP AT XOICF6 INTO WA_XOICF6 WHERE FORTRMTYP = C_1.
     IF WA_XOICF6-QUOTVAL IS INITIAL.
        V_FLAG = C_1.
        EXIT.
     ENDIF.
   ENDLOOP.

   IF V_FLAG = C_0.
*    PICK A
     G_FORMRATE      = L_A_TERMRATE.
     E_OICF4-FORMVAL = L_A_VALUE.
   ELSE.
*    PICK B
     G_FORMRATE      = L_B_TERMRATE.
     E_OICF4-FORMVAL = L_B_VALUE.
   ENDIF.


ENDFORM.
```

Process Chain

For this automation to work, you will need to make F&A pricing setup with routine as is mentioned above.

Finally, afterwards when both the Price Quotes, Main as well as Supplemental Quote are available in Pricing table, system will make activate Term A – Supplemental Quote automatically.

If Supplemental Quotes are not available as it is posted by oil exchange during spring and summer only, the system will automatically pick Term B – Main Quote.

So, there will no need to make manual changes in F&A pricing, there will be no need to track starting and Stop of Supplemental Quotes.

System starts Working Automatically.

Issues Faced

When we worked on this requirement for Automation of Price quote switching between Main & Supplemental Quotes, we faced following issues:

1. We considered only one particular exchange Quote source and type in our scope. When user entered combinational Oil exchange Quote usage and different quote types, logic didn't worked.

2. The Quote values were fetched from "Z" tables or may in some cases it can be standard price tables. Hence, for different exchanges, different "Z" table were in housing the Quote values. System use to always get instructions and was totally dependent on which tables to check & on what priority.

3. There were lot of confusion and problems from Final and Provisional rule settings for "No Quotation handling Field". The User has always used a combination of 2 - Error if no quote in final rule as Final Rule & 1 - Ignore & continue in Provisional Rule as provisional Rule.

Lessons Learnt

1. We learnt a lesson on making this logic independent of any Source Oil Exchange and any source price quote type. We succeeded in creating an logic where any input quote from any of price feed Oil Exchange can be taken as input.

2. The logic was then made independent of making combinations between different Price Quote. I mean to say, now within Term A or Term B, user can use 65% value from one quote and 35% value from another price quote to calculate base price for the product.

3. We studied the behavior of "No Quotation handling Field" and then we were able to set both the indicator as "1" for term A – supplemental code. The main control was kept with Term B in order to give error if no price Quote is determined by the system.

4. We also made this whole concept logic independent of the Customized "Z" tables or any standard pricing tables which in house the Price Quotes from different table

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