Option Explicit

' Get the slot corresponding to the Margin time not after,

' if the margin is too early, return the slot compatible with the earliest time (schedule)

' the slot could be the last one because large Margin

Function AU\_NPMF\_GetEarlierAvailableSlots(ByRef lSlotUsed() As Integer, lSlot\_nb As Integer, \_

lCurrentSlot) As Integer

Dim lTargetSlot As Integer

Dim li As Integer

' find a slot corresponding to the Margin value to put the flight

lTargetSlot = -1

' the slot could be the last one because large Margin

' but no problem

' the flight could have a target time = to the schedule and if no anticipation then bad return value !!!!

For li = lCurrentSlot To 0 Step -1

' first store the latest time compatible with the flight schedule

If lSlotUsed(li) = -1 Then

lTargetSlot = li

li = 0

End If

Next li

AU\_NPMF\_GetEarlierAvailableSlots = lTargetSlot

End Function

' Get the slot corresponding to the Margin time not after,

' if the margin is too early, return the slot compatible with the earliest time (schedule)

' the slot could be the last one because large Margin

Function AU\_NPMF\_GetTargetSlots(ByRef lSlotTime() As Date, lSlot\_nb As Integer, \_

lMarginTime, lEarliestTime) As Integer

Dim lTargetSlot As Integer

Dim lTimeSlot As Integer

Dim li As Integer

' find a slot corresponding to the Margin value to put the flight

lTargetSlot = -1

lTimeSlot = -1

' the slot could be the last one because large Margin

' but no problem

' the flight could have a target time = to the schedule and if no anticipation then bad return value !!!!

For li = lSlot\_nb - 1 To 0 Step -1

' first store the latest time compatible with the flight schedule

If lSlotTime(li) >= lEarliestTime Then

lTimeSlot = li

End If

If lSlotTime(li) <= lMarginTime Then

' if found a slot test also if compatible with shedule, otherwise take the last compatible

If lSlotTime(li) >= lEarliestTime Then

lTargetSlot = li

li = 0

End If

End If

Next li

If lTargetSlot > -1 Then

AU\_NPMF\_GetTargetSlots = lTargetSlot

ElseIf lTimeSlot > -1 Then

AU\_NPMF\_GetTargetSlots = lTimeSlot

Else

AU\_NPMF\_GetTargetSlots = -1

End If

End Function

' Get the slot corresponding to the Margin time not after,

' if the margin is too early, return the slot compatible with the earliest time (schedule)

' the slot could be the last one because large Margin

Function AU\_NPMF\_GetLaterAvailableSlots(ByRef lSlotTime() As Date, ByRef lSlotUsed() As Integer, lSlot\_nb As Integer, \_

lCurrentSlot, lEarliestTime) As Integer

Dim lTargetSlot As Integer

Dim li As Integer

' find a slot corresponding to the Margin value to put the flight

lTargetSlot = -1

' the flight could have a target time = to the schedule and if no anticipation then bad return value !!!!

' test also thecurrent one just to be sure

For li = lCurrentSlot To lSlot\_nb - 1

If lSlotUsed(li) = -1 Then

' take the first with a compatible time with schedule

If lSlotTime(li) >= lEarliestTime Then

lTargetSlot = li

li = lSlot\_nb

End If

End If

Next li

AU\_NPMF\_GetLaterAvailableSlots = lTargetSlot

End Function

' Get the slot corresponding to the Margin time not after,

' if the margin is too early, return the slot compatible with the earliest time (schedule)

' the slot could be the last one because large Margin

Function AU\_NPMF\_GetIxOfEarlierFlightCanMove(lAll\_AUFlights As CL\_AllFlights, \_

ByRef lSlotTime() As Date, ByRef lSlotUsed() As Integer, lSlot\_nb As Integer, \_

lCurrentSlot As Integer, lCurrentFlight As Integer) As Integer

Dim lEarlierAvailableSlot As Integer

Dim llEarlierAvailableSlotTime As Date

Dim lTargetSlot As Integer

Dim lEarliestFlightSlot As Integer

Dim li As Integer

Dim ltime As Date

' find a slot corresponding to the Margin value to put the flight

If lSlotUsed(lCurrentSlot) = -1 Then

If AU\_NPM\_ManageMarginPrioFlights\_IsFlightScheduleCompatible(lAll\_AUFlights, lSlotTime(lCurrentSlot), lCurrentFlight) = True Then

' this fligh is compatible

lTargetSlot = lCurrentSlot

Else

' no solution because current and earlier slot not compatible with schedule

lTargetSlot = -1

End If

Else

' find an empty flot

lEarlierAvailableSlot = AU\_NPMF\_GetEarlierAvailableSlots(lSlotUsed(), lSlot\_nb, lCurrentSlot)

If lEarlierAvailableSlot < 0 Then

' no earlier slot available

lTargetSlot = -1

Else

lTargetSlot = lEarlierAvailableSlot

End If

End If

AU\_NPMF\_GetIxOfEarlierFlightCanMove = lTargetSlot

End Function

'------------------------------------------------------------------------------ AU\_NPMF\_GetFirstCompatibleSlot

' Get the first slot corresponding to the schedule time ,

Function AU\_NPMF\_GetFirstCompatibleSlot(lAll\_AUFlights As CL\_AllFlights, \_

ByRef lSlotTime() As Date, ByRef lSlotUsed() As Integer, lSlot\_nb As Integer, \_

lCurrentFlight As Integer) As Integer

Dim lEarliestTime As Date

Dim lTargetSlot As Integer

Dim li As Integer

' find a slot corresponding to the Margin value to put the flight

' find an empty flot

lEarliestTime = lAll\_AUFlights.GetRefBlockTime(lCurrentFlight) \_

- GHspt\_FlightEarlyDeparture\_forDate

lTargetSlot = -1

For li = 0 To lSlot\_nb - 1

If lSlotTime(li) >= lEarliestTime Then

' this slot is compatible

lTargetSlot = li

li = lSlot\_nb

End If

Next li

AU\_NPMF\_GetFirstCompatibleSlot = lTargetSlot

End Function

'------------------------------------------------------------ AU\_NPM\_ManageMarginPrioFlights\_AssignPrioOnlyFlight

' Assign priority only flights in the remaining slot

Function AU\_NPM\_ManageMarginPrioFlights\_IsFlightScheduleCompatible(lAll\_AUFlights As CL\_AllFlights, \_

lSlotTime As Date, lFlightIx As Integer) As Boolean

Dim lEarliestTime As Date

Dim lReturn As Boolean

' the slot is available : end of the recurcive function

lEarliestTime = lAll\_AUFlights.GetRefBlockTime(lFlightIx) \_

- GHspt\_FlightEarlyDeparture\_forDate

' test if flight can be move

If lSlotTime >= lEarliestTime Then

lReturn = True

Else

lReturn = False

End If

AU\_NPM\_ManageMarginPrioFlights\_IsFlightScheduleCompatible = lReturn

End Function

'---------------------------------------- AU\_NPM\_ManageMarginPrioFlights\_UpdateFDATimeFromSlots

Sub AU\_NPM\_ManageMarginPrioFlights\_UpdateFDATimeFromSlots(lAll\_AUFlights As CL\_AllFlights, \_

ByRef lSlotTime() As Date, ByRef lSlotList() As Integer, lSlot\_nb As Integer)

Dim lFl As Integer

Dim lFlIx As Integer

Dim ltime As Date

' ---------- manage the baseline flights on schedule

' loop on baseline flights

For lFl = 0 To lSlot\_nb - 1

lFlIx = lSlotList(lFl)

If lFlIx > -1 Then

ltime = lSlotTime(lFl)

Call lAll\_AUFlights.SetFDATime(lFlIx, ltime)

End If

Next lFl

End Sub