Fifth Assignment (individual work)

Steps

☐ **Consider the slot allocation problem described in Slide 43 and formulated in slide 49.**

☐ **Consider also the slot allocation instance provided under the Homework sheet in Ex_SlotAllocation.xls**

1. **Compute the solution that would be obtained by allocating flights sequentially, i.e. giving priority to the <u>flights that are requested for a longer period</u> - similar to current slot allocation approaches).**

2. **Compute the optimal solution using the AMPL model ExampleSlotAllocation.run – do not forget to update the ExampleSlotAllocation.dat**

3. **Add a new constraint ensuring that no flight can be displaced by more than 2 periods (maximum displacement = 2) – Compute the new optimal solution**

4. **Consider that the maximum displacement = 1 ; Compute the new optimal solution. If no feasible solution can be found, create a new decision variable named flight rejected R_i. The objective function should now have two objectives: (i) minimizing the number of flights rejected; (ii) minimizing total displacement. A larger weight (e.g. 1000) should be given to objective (i) to minimize first the number of flights rejected, and then the total displacement.**

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Deliverables

Note: The deliverables should be submitted to edimension

☐ **PDF/Word file**

- ■ **Solution obtained in Ex.1.**

- ■ **Solution obtained in Ex.2.**

- ■ **Solution obtained in Ex.3.**

- ■ **Solution obtained in Ex.4.**

- ■ **Print screen of the final AMPL mod. file**