APRON DEVELOPMENT PLANNING OF JUANDA INTERNATIONAL AIRPORT SURABAYA

Student Name : Rifdia Arisandi
NRP : 3108100072
Department : Civil Engineering FTSP - ITS
Lecturer Supervisor : Ir. Hera Widiyastuti, MT., Ph. D.

ABSTRACT

Apron is one of the main components in the airports system because it is the area where the aircrafts park and do some activities before takeoff or after landing. The servicability of apron should be evaluated periodically in line with the number of people using aircraft as one mode of transportation. Apron must be able to serve the needs of the aircraft gate occupancy in order to avoid saturation which can cause delays on plane schedule. The apron servicability is related to the other airside facilities, for instance runway and exit taxiway. So, it needs to do the analysis of runway and exit taxiway development.

Based on aircraft movement data that obtained, start to forecast its peak hour for 2022. Then, determine the design, dimension, and pavement for apron, runway, and exit taxiway. Apron used the Rigid Pavement method, otherwise runway and exit taxiway used the Flexible Movement method.

Based on the analysis result, its peak hour in Year 2022 is 51 movements. Apron development needs to be done is the addition of the gate position to 39 gates, with apron dimension is 1691.36 meter × 124 meter. Apron pavement consist of 43 cm thickness of slab and 16 cm thickness of subbase. The reinforced concrete slab used 8D19-12 reinforcement and 51 cm long dowel with and 43 cm longitudinal and transverse direction space.

The airside development also determined the development of runway and exit taxiway. From the analysis, determined the dimension of runway is 3925 meter × 45 meter. For the pavement of runway and exit taxiway used the total thickness is 115 cm. While for the exit taxiway is planned to be design for 6 exit
taxiways. There will be four $30^\circ$ angled-exit taxiways and two $90^\circ$ angled-exit taxiways in each of runway-end.

**Keywords:** Aircraft Peak Hour, Forecasting, Planning Aircraft, Juanda International Airport