

Using AnyLogic to Benefit the Planning and Design of Airport Facilities

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Airports must support passengers throughout their arriving or departing experience and there are daily, weekly and seasonal volume peaks that must be managed to ensure that facilities meet the time sensitivity of air travel. The effective planning and design of airport facilities must include the dynamics of time, passenger use cases, and interactions between multiple operating entities. TranSystems is a design and engineering firm that has been using simulation modeling to quantify capacity requirements of airport facilities and confirm operational fluidity with stakeholders. The ability to visualize performance, include passenger or vehicle flows, and quantify wait times, congestion levels, and resource utilization is useful to right-size facilities and demonstrate ability of facility designs to accommodate peaks across different scenarios. AnyLogic is an ideal tool for airports that must support multimodal passenger demands as they use rental car facilities, busses, elevators, waiting areas and more. The ability to integrate pedestrian and vehicle libraries and customize the process logic provides the flexibility needed for planning scenarios. This paper presents examples of how AnyLogic has been applied at different airports and used for decision making for airport consolidated rental car facilities, bus transfers, and passenger gate areas.