ADP

Reducing congestion at Paris airports

Objective

Congestion is a constant problem for airport operators. Whether it is airliners circling to land or travelers crowding check-in areas, congestion slows travel time, adds to the wear and tear on equipment, and tests the patience of everyone involved. For Paris, airport congestion problems are literally doubled, as the city has two international airports that handle more than 1,500 flights per day. Airport authority Aéroports de Paris (ADP) must rely on advanced planning and visualization software to smoothly run its operations.

Solution

ADP controls airport congestion with a powerful resource allocation system based on ILOG Solver's optimization technology and ILOG visualization software that includes ILOG Views and ILOG Gantt for .NET. As ADP increasingly depends on .NET solutions in operating its airports, ILOG Gantt for .NET, the first Gantt chart product for .NET, allows ADP IT personnel to quickly build sophisticated graphical interfaces for displaying plans and schedules. By using a distributed architecture based on ILOG Server and ILOG Rules, the system also enables users to monitor the execution of a plan and react to unforeseen events in real time. The state-of-the-art airport management system has reduced planning time and heightened efficiency at the two Paris airports through an intuitive, user-friendly application environment. The heavy traffic at the airports is handled more smoothly, with check-in facilities allocated to move passengers through quickly, and plane parking stands optimally assigned to shorten the turnaround time for servicing aircraft.

ILOG Products: ILOG Solver, ILOG Gantt for .NET, ILOG Views, ILOG Rules and ILOG Server

■ **Industry:** Air travel

■ **Application:** SAÏGA (airport planning and scheduling)

■ **Geographic Coverage:** Paris

■ **Benefits:**
 ▶ Fewer flight delays
 ▶ Better assignment of resources
 ▶ Faster through time for passengers
 ▶ Reduced operating costs

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Keeping planes and people moving

Every day ADP must allocate resources to arriving and departing planes. These resources include gates, parking stands, check-in counters, luggage conveyor belts and various other ground equipment. They must be assigned to give every plane full support, with the goal of quickly and efficiently moving through more than 150,000 air travelers a day. SAÏGA optimizes the process by using ILOG Solver to compute the best solutions. Initially introduced to handle plane parking, the application takes the 240 parking stands at one airport and assigns them to 850 to 900 flights per day. ILOG Solver allocates the stands by weighing constraints that include airline preferences, security concerns, fuel and luggage handling, and departure and arrival times. Once a solution has been found, it is displayed with ILOG Gantt chart software and shared among airport planners through ILOG Server. The plan can be fine-tuned with an interface built with ILOG's visualization software. The ILOG software gives SAÏGA real-time planning for the speed needed to quickly accommodate unexpected constraints such as equipment breakdowns and flight delays. The system also assigns all the primary ground resources: buses, gates, check-in counters, luggage carousels and conveyor belts, and arrival and departure lounges. It performs long-term scheduling as well, guaranteeing continuity in its planning. Airline personnel can rely on the system to assign the same resources throughout a given period, avoiding the delays and confusion that can result from frequent changes.

> "ILOG Gantt for .NET exceeds our business expectations for planning hundreds of thousands of activities, and offering highly specific notations and interactions .Its ease of use in Visual Studio .NET saves us a considerable amount of time. It is the worthy successor to ILOG Views [C++] for our airport planning applications."
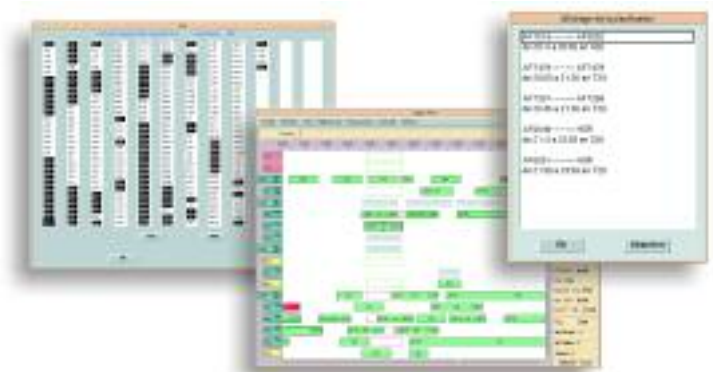>
> – Christophe Sambo
> Project Leader
> Aéroports de Paris

Benefits

Under the old system, it took ADP planners more than four hours to manually allocate parking stands. The SAÏGA application does the same job, plus assigns other ground equipment, in just three minutes, and airport staff can check and fine-tune the results in about 30 minutes. The system has improved service at both airports, increasing the satisfaction of the airlines and their passengers. With the number of airline passengers growing every year for ADP, exceeding 71 million in 2001, the airport authority considers SAÏGA an invaluable logistics tool.

Project

SAÏGA was first introduced in 1997. The initial project took three years to complete, but development of the optimization engine took only two months. SAÏGA is constantly being expanded, and ILOG Gantt for .NET has recently been added to the application. ADP adopted ILOG Gantt for .NET as part of an initiative to incorporate the .NET platform into its operations.

SAïGA's ILOG graphical user interface

Aéroports de Paris

Aéroports de Paris (ADP) is a publicly owned company under the authority of the French Ministry of Aviation. It has grown tremendously since its creation in 1945, and today handles an average of 60 million passengers a year. ADP is currently modernizing its airports, Orly and Charles de Gaulle, to improve the terminals and add extra runways. Adopting SAÏGA was crucial to their program, as it will enable ADP to add resources while maintaining tight control over all its operations.

▪▪ ABOUT ILOG

ILOG delivers software and services that empower customers to make better decisions faster and manage change and complexity. Over 2,000 global corporations and more than 400 leading software vendors rely on ILOG's market-leading business rule management system (BRMS), optimization and visualization software components, to achieve dramatic returns on investment, create market-defining products and services, and sharpen their competitive edge. The BRMS market share leader, ILOG was founded in 1987 and employs more than 600 people worldwide.

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