Siamos APM
Airport Performance Manager
Smart and smooth processes for efficient airports

siemens.com/mobility
Safeguarding our mobility is the number one challenge facing society. To ensure our mobility in future, we need networked transportation and information systems. And we will only meet these mobility requirements through efficient coordination and perfect meshing of all modes of transportation. This is why Siemens – with its “Complete mobility” approach – is offering integrated transportation and logistics solutions for cost-effective and environment-friendly passenger and freight services.

Key elements of “Complete mobility” are solutions for efficient, attractive and eco-friendly airport performance. Investors, stakeholders, and passengers expect airports to operate safely and efficiently, providing a constant high level of service quality and security. In addition, the community aims for environment-friendly operations, with respect to noise and gaseous emissions.

Therefore significant effort is spent to optimize seasonal flight schedules, to prepare daily flight plans and to allocate adequate resources. Siamos Airport Performance Manager enables airports to implement these plans during the day of operation under dynamically changing conditions.
Every day of operations the airport faces a huge amount of unforeseen conditions and events. The ‘daily chaos’ with on-the-fly adaptation of plans and the re-coordination of actions and decisions needs suitable IT systems to support the decision making of the involved operators. They need a clear picture of the actual situation and more and more as well an assessment of the impact of their decision to other processes and stakeholders.

**Siamos APM – powerful tool for airport management**

The Siamos ™ APM Airport Performance Manager provides for all levels of your airport management a perfect at-a-glance-overview of past, current and predicted situations at your airport throughout the day-of-operations. Siamos APM is covering both air and landside, ranging from key performance indicators, traffic and passenger flows, queues and congestions, to detailed inside views of processes. Complementary, an in-depth-analysis based on reports and statistics is supported as well.

For operative staff the Siamos APM monitors holistically aircraft operations and passenger flows, considers the inter-relationship between process level status of all aircraft rotations level status of all aircraft rotations and capacity demand mismatches.

**Siamos APM for more performance, attractivity and revenues**

Key performance indicators are derived from process and flow level. Siamos APM contains user-configurable duration estimators for the different air-to-air and passenger processes but can also incorporate predictions of external sources.
Siamos APM makes your airport more attractive for passengers, through
• the reduction of waiting times at check-ins, security, customs, immigration and baggage reclaim
• the reduction of passenger crowds at gates and terminals

Siamos APM supports a significant raise of aviation and non-aviation revenues by
• a more efficient resource management and enhanced turnaround operations
• allowing passengers more time for airport shopping

Siamos APM supports your transition from today’s scheme of operation to a tailored A-CDM (Airport Collaborative Decision Making) and even TAM (Total Airport Management) solution compliant to Eurocontrol and Eurocae standards.

Siamos – a modular system
Siamos APM is part of the modular Siemens Airport Management and Operations Suite (Siamos) and is a modular system itself. This allows you to start with the Siamos APM components needed urgently at your airport and to let grow gradually according to your specific business needs.

Siamos APM is a fully web-based application using SOA principles with an open system architecture, supporting standard interfaces. Siamos APM components are as well easy to integrate into ATC and Airline IT-infrastructures to support system wide information management with a low total cost of ownership.

Technical specifications

Interfaces:
• Airports AODB via Web Services or ESB
• Multiple Turnaround Managers at Ground Handlers / Airlines
• AMAN, DMAN and SMAN (if available)
• CFMU via ATC to exchange FUM and DPI information
• Cellphone provider to distribute SMS alerts

GUIs:
• Smartphone
• Standard-Desktop with different internet browsers
• Passive large TFT, LCD, Plasma screens
• Videowalls in Control Center environments

Business Logic:
• JEE platform
• Oracle Weblogic
• Oracle DBMS
• External user rights and roles supported
• Scalable redundancy concept
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Siamos APM Airport Performance Manager

Features of Siamos APM

Holistic consideration of airside and landside processes
Siamos APM traces the individual aircraft – compliant with the Eurocontrol Airport-CDM milestone concept – from the outstation to approach, taxi-in, turnaround, taxi-out until climb out phase. Additional drill-down capabilities give you the opportunity to get further details about individual turnaround processes. Passenger processes are traced along the chain from curb-side to boarding and from de-boarding to leaving the airport.

End to end variable process time prediction
Smart process duration predictors are integral Siamos APM components for all these processes thus extending the Eurocontrol A-CDM VTTC concept to a more general one, a Variable Process Time Concept. In case that even a higher prediction quality is needed for certain processes, Siamos APM is prepared to interface with external modules. It is easy to interface Siamos APM to a more sophisticated trajectory predictor or even a full AMAN to further increase the accuracy of arrival predictions.

Consistent process and traffic flow consideration
A hybrid process and traffic model-based on technology developed by the German Aerospace Center DLR – is used to assess in addition the impact of airside and landside congestion to the process chains. The process time estimation is taking into account congestion by predicting extra waiting times in holding patterns, at the departure stand, before deicing pads and in front of the runway.

Give airlines the traffic information that they can decide
This Siamos APM function is a perfect support to the Eurocontrol ACDM Pre-departure Sequencing concept as well as to the SESAR UDPP (User Driven Prioritization Process). As airlines can obtain from APM reliable forecasts of their likely departure time, this gives them the necessary lead time to optimize their airline’s network, to choose the most cost effective turnaround contracts dynamically.

Target processes allow to distinguish between imported delay and local additional time
A mature target process concept provides normative reference information for all considered processes thus enabling a clear distinction of imported delay versus locally generated delay. The target concept as well enables active triggering of staff members or even third parties via SMS or e-mail whenever a process is running out of time. A statistical analysis and reporting component gives you the opportunity to a structured analysis of the post operations data for systematic trends, in order to start a quality improvement process in your organization and with other stakeholders.

Webbased technology to disseminate consistent situation information by multiple means
Siamos APM is fully web-based and provides a variety of visualization means, ranging from smartphone, over standard desktop equipment to large passive information screens and videowalls in Airport Operations Control Centers (APOC).
The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.